

FLEAT IV

**The Fourth Conference on
Foreign Language Education and
Technology**

July 28 to August 1, 2000



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**In Commemoration of the 40 Years of the
Language Laboratory Association of Japan**

PROCEEDINGS

Hosted by the
Japan Association for Language Education and Technology (LET), the
International Association for Language Learning
Technology (IALLT), and
the Korea Association of Multimedia Assisted Language
Learning (KAMALL)

Navigating the Book

Except for the Plenary Sessions and Citizen Seminars, all of the presentations, regardless of type, are in alphabetical order by the first major word of the title.

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Editorial Note

While presentations at FLEAT IV were selected through an adjudication process based on submitted abstracts, papers submitted to this volume have undergone neither adjudication nor thorough editing. The responsibility for the accuracy and completeness of each paper remains with the authors.

Some of the articles are partly or fully in Japanese and therefore not all of them may be readable without the Japanese version of Acrobat. This is also true for some of the reference notes which were not completed in accordance with APA standards.

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Preface

Morio Kono

Conference Committee Chair

Kobe Kaisei (Stella Maris) College, Japan

This volume brings together many of the lectures and papers given at FLEAT IV—the Fourth International Conference on Foreign Language Education and Technology co-sponsored by the Japan Association for Language Education and Technology (LET), the International Association for Language Learning Technology (IALL) and the Korea Association of Multimedia-Assisted Language Learning (KAMALL), which took place at Rokko Island City, Kobe, from July 28 to August 1, 2000. The central theme of the Congress was "Language Learning and Multimedia: Bridging Humanity and Technology."

Bridging humanity and technology implies that the use of the multimedia should be established on the research of the neuro-scientific and psycholinguistic mechanism of language acquisition. In general and wider meanings, the most advanced technology of language learning should be in harmony with humanity—in the spirit of social-mindedness, cooperation, benevolence and self-control concerning others.

The conference was also held in commemoration of 40th anniversary of the Language Laboratory Association (LLA), renamed the Japan Association for Language Education and Technology (LET) on the occasion of this conference.

FLEAT IV was, in the true meaning of the word, an international conference. One hundred and twenty-one foreign scholars gathered in Kobe, from the USA, Korea, Taiwan, Canada, the United Kingdom, Iran, Israel, Brazil, Austria, Australia and other countries together with 385 Japanese scholars. The other related projects were also great successes—the Satellite Seminars for high school teachers, for example, had 169 participants and the Public Seminars opened to the general public had a total attendance of over 200 people. We are very happy and proud that FLEAT IV was expanded so much in these ways.

The publication of these Proceedings will not only provide the conference participants with a written record of the papers, but will also offer the results of this conference to a much wider academic community by providing access to research that we believe to be of great importance. We should like to emphasize the role of this volume as an example of the vitality of a rapidly expanding academic field.

We hope our effort and contribution will prove to be useful to the wide variety of specialists from dozens of institutions and countries who work daily in a serious and dedicated fashion to further our knowledge and skill in areas which are crucial to the general understanding of language education.

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From the President of the Japan Association for Language Education and Technology (LET)

Hiroshi Asano
Toyo Gakuin University, Japan

At the opening ceremony I talked about the necessity of looking at both the past and the future like Janus, who is a Roman god with two faces. Our FLEAT Conference is generally thought to aim at discussing solving the present and future problems of technology and education, and, of course, it is the right purpose in that our teaching techniques have been changing rapidly with the progress of technological devices and that we have to improve our techniques according to progress in technology. I just wanted to say that it is as important to remember what we did in the past. As a matter of fact, our association changed its name from LLA (the Language Laboratory Association of Japan) to LET (the Japan Association for Language Education and Technology) on the occasion of LLA's 40th anniversary. I suppose we would not have been able to step forward as a new organization without long and strenuous efforts on the part of our predecessors.

I believe that FLEAT IV was a great success. With more than 150 presentations, three plenary addresses by the distinguished guest speakers, and many other events, the participants were able to collect first-hand information on what was going on in many parts of the world. By attending some of them I was inspired to make a greater effort to improve English language education in Japan.

I also liked the general theme of FLEAT IV, "Language Learning and Multimedia: Bridging Humanity and Technology." From an educational point of view, advantages and disadvantages of using computers have often been disputed. We should never forget, therefore, what effects new technology will bring about, especially upon our mental functions. In this sense, also, FLEAT IV was a success. Some of the presenters eagerly talked about language learners' favorable or unfavorable changes in their attitudes.

FLEAT, which so far has been co-sponsored by the LLA and the IALLT, had a new co-sponsor, KAMALL for this fourth conference. As a result, more people from Asian countries took part in FLEAT IV. I do hope that another FLEAT will be held not only in Japan, but somewhere else in Asia in the near future.

One more thing I should mention about FLEAT IV is that it was held in the city of Kobe. I am afraid many of the participants were ignorant that it was one of the cities that were heavily damaged by a great earthquake only five years ago. Such surprising recovery was possible owing to progress in technology as well as to efforts on the part of the citizens. Technology seems to have infinite possibility. It is human beings, however, who make it work for their welfare and happiness.

I hope more of us will meet again in FLEAT V in Utah, U.S.A. in 2005 to discuss the further possibility of using technology for language learning and education. We should help people learn to communicate with and understand each other much better, because people in the 21st century will need more linguistic communicative skills so each of them can be a world citizen.

I would like to thank all the participants for their cooperation, and all the members of the host and supporting organizations. My gratitude also goes to the Organizing Committee who made it possible to celebrate the LLA's 40th anniversary by a great and successful event like FLEAT IV

From the President of the International Association for Language Learning Technology (IALLT)

Read Gilgen

University of Wisconsin, U. S. A.

FLEAT IV has come and gone, but the memories linger on. We all owe a debt of gratitude to our Japanese hosts for organizing an outstanding conference that attracted hundreds of language technology professionals from around the world.

If you weren't among the fortunate ones who could attend FLEAT IV, you can still benefit from these printed proceedings. Although these can't convey the beauty of Kobe and Rokko Island, nor the warm hospitality of LET, they can give you a sense of some of the work being doing by your colleagues.

IALL is pleased to be able to continue its special relationship with LET through these FLEAT conferences. We're also happy that KAMALL was able to join us this time around. The spirit of FLEAT remains with us all as we return to our work, and we look forward to FLEAT V, which is scheduled to be held in the Summer of 2005 at Brigham Young University in Provo, Utah.

We'll see you all at FLEAT V!

From the President-Elect of the Korean Association of Multimedia Assisted Language Learning (KAMALL)

In-seok Kim

Dongduk Women's University, Korea

My attendance at the FLEAT conference was a brand new experience. Although I knew the existence of FLEAT as an international conference long before, I had never had a chance to attend it. But this attendance gave me a real feel of what FLEAT is like. I am proud to mention that I personally learned a lot from this conference. I believe that this conference was made possible with unreserved efforts from a lot of people who deserve being mentioned.

First of all, I would like to express my deep gratitude to Professor Kohno (FLEAT Chair) for his invitation to me to attend the conference. I believe that his dedication to this conference made it run so smooth and efficiently. I am also grateful to Professor Asano (President of LET), Professor Gilgen (President of IALLT), and other members of these two organizations for their assistance and hospitality which was shown me throughout the conference. I am glad that the FLEAT IV conference achieved quite a success which any other international conferences could not attain.

I would like to express a special “Thank you” to the organizers of Kanto Chapter Forum which gave me a chance to present the picture of multimedia-assisted foreign language education in Korean schools. This forum presentation generated a lot of enthusiasms from people present at the forum in that they raised questions and made valuable comments on my presentation.

Finally, I hope that in the future FLEAT can be restructured into a bigger international organization which is jointly operated by IALLT (North America), LET (Japan), KAMALL (Korea), POCMELIA (Taiwan), and similar types of organization of other countries. I take a view that it should also produce a journal as well. By doing this, FLEAT can grow as an international organization that can surely draw much attention among the people engaged in teaching foreign languages through the medium of the computer around the globe.

Networked Multimedia as Tools for Educational Purposes

Hermann Maurer

Graz University of Technology, Austria

Introduction

I'm going to talk about Network Multimedia as Tools for Education Purposes in a very broad sense. I am not just talking about applications to language teaching and language learning, but to teaching and learning in general. I want to try to explain a little bit about the main issues involved when you use network multimedia in the educational process. As a matter of fact, as you will see, I will actually be even a little critical of some of the potential developments towards the end of my talk.

After a fairly long section on general aspects, which might be a little bit boring but which is also very important, I will try to explain to you why I think that if we use network multimedia, the communicational and co-operational component is the most important one. After that I will talk a little bit about my research of so-called "Active Documents" and I will try to show how much we have done in this research so far.

Then I will address the problem of feedback in a very specific fashion. Feedback is simply this. If I prepare some materials for my students, I want to find out how much they like it, where they fail or whether they perform better than they did without such materials, etc. I will also mention Hyperwave, a system upon which much of my work is based; a hyperwave training portal that actually embodies many of the ideas that I will have explained before.

Finally, in the last part of my talk I will pose a few provocative questions. The most provocative of these is, "Should we continue to learn foreign languages in the future?" Maybe this isn't necessary after all because Siemens announced a short time ago that as of the year 2002, you would be able to make telephone conversations from Germany to Japan and the German partner will speak German and Japanese partner will hear a translation into Japanese and vice versa with an automatic translation software doing the intermediate work. So why should I learn Japanese? Why should someone from Japan learn English or German if indeed a computer can act as a translator in real time? Then, I will still be a little bit provocative by asking, "Do we need written language at all?" and I will pose some strong arguments that maybe written language will more or less disappear over next the 50 years. And if this shocks you a little bit, great, then you will look forward to that part of the talk. I will then try to give some arguments as to why I can make that statement. And this will then lead me to another new area, to the area of source versus subject knowledge. If that doesn't mean anything to you at the moment, it will at the end of the talk, I hope.

General Aspects

Now starting with the first chapter—when we talk about network multimedia we usually mean WWW, the World Wide Web. If you look at the WWW, there are literally at least 50,000 to 80,000 sites now available that offer educational material but most of this material is not really well versed in the aims of valid educational materials. This is why I am claiming that the WWW is very often misused. It is not used to its fullest extent, but only used in an arbitrary fashion. Typically, people who put up multimedia WWW pages may incorporate simple questions and answers, but very often just in the form of multiple choice questions. Maybe they even provide some simple communication facilities like e-mail. After doing this, they then claim they have put up a site for educational purposes.

My claim is that, yes, such a site maybe useful to some extent, but it certainly isn't as useful as it could be if one observes some of the major points I'll be trying to make in this talk. So, basically, I am claiming that if you just use the WWW in this way, then you not using it as you should and you are not using it as you should for language

teaching—even if you add modules that are language teaching specific. There are many such modules and I'm sure that most of you who are sitting here are more familiar with these language specific aspects than I am, so I don't want to go too deeply into them.

But a language specific tool includes things like other types of question and answer dialogs. Typically if you look at a workbook, for example the one for the Cambridge Language Certificate, you very often find problems of this kind: Fill in the gap, choose a certain word to fit in the context or sentence, or try to find the right tense or use of a correct verb and things like this. In language teaching, if you look at the ordinary workbooks that are floating around on paper or in electronic form, you will find many more sophisticated techniques than just multiple-choice questions. A number of tools have been around for training in grammar or the retention of words for some time. For example, one technique that has been around now for at least 40 years is called the three-stack technique. It was originally done with three stacks of paper as you probably know and now there are electronic versions available.

There are also things like pronunciation trainers. For example, at our institute, they have developed dictionaries for all the European languages which includes not only the pronunciation of a word when you look it up, but which also incorporate the possibility of talking into the microphone and letting the computer analyze whether you have pronounced the word correctly or not by comparing a stored voice against your voice. And it is also doing all kinds of filtering and adjusting so that even if the voice recorded was female and you are male and your intonation might be different all this is being taken into account. You know none of these pronunciation trainers work perfectly, but they seem to be working better and better all the time. I know that we will hear about such things during the course of the next few days.

And of course, there are completely different ways of teaching languages, for example, like just exposing students to movies and movie clips that are self-explanatory and where they hear the actors talking a foreign language. Because the movies and clips are self-explanatory, they start to understand what is being talking about. I know that this list can be continued for a long while and I know from looking at the program that we will hear many such language-specific techniques during this conference. I'm looking forward to learning more about some of those aspects myself. But I'm not going to go into those but, as I said earlier, will speak about generalities, the general ideas that are necessary and important if you are to use network multimedia for educational purposes.

Let me start with this long list. It is going to be the longest list you will see on the screen today. My claim is that the basic requirements for any general network training or teaching or language environment are as follows:

1. First of all, when you present some material to a user, to a student, the most important thing to do first is to determine the level of knowledge of the user. Nothing is more de-motivating than being presented with material that you already know and also nothing is more de-motivating than to be presented with material that is much too hard for you. One thing that is very often overlooked is the fact that we actually need a potential for making a pre-test or of finding the level of knowledge. This is true whether we teach geography or mathematics or whether we are teaching languages.
2. Now, there is another issue that is equally important but is much more difficult to handle—the pre-testing of the cognitive style of the person. We know from learning theory that different persons learn in different styles. That some, for example, learn better by reading, others learn better by listening or actually viewing pictures and movies, and still others cannot learn at all unless there are some finger movements or some tactile, active component involved. This brings me to a very important point that is not on the slide here. When you hear about “virtual universities” or about e-learning, when you hear about using network multimedia for education, you have to distinguish two very important things. One method of application that is sometimes called a “Virtual University” or “distance learning,” is to do the following: While I am standing here and am giving you a presentation, this presentation with my voice together perhaps with my face, and together with these slides, is actually sent via some analogue or digital means to some other lecture room so that other people, not only the 200 or 300 persons sitting

here, but another 200 to 300 persons sitting somewhere else can listen to what I am saying at this moment. For me this is almost a misuse of technology. It may be justified in some instances, but the real aim of technology is not to make lecture rooms bigger and bigger so that one lecturer can suddenly lecture to 10,000 people. The real aim is to use network multimedia to individualize the teaching style. This is the first of the two points that the slides points out very well. You have to really look at the level of knowledge and the cognitive styles of the person, and then you can offer suitable multimedia material in a suitable form, something that I cannot do here. I am confronted here with you and your levels of expectation, your levels of knowledge in computer science and your levels of knowledge in language teaching, all of which are very heterogeneous among us, including myself. So if I give a certain speech or lecture at a certain level it may be suitable for some of you but for some of you it may not be suitable. And, unfortunately that is the case whenever we are lecturing to a large group. Hopefully, by using computer technology, by using network multimedia, we will be able to individualize our teaching process and our learning process much more than we are able to do today.

3. The next point is, of course, also very important. Early systems using computers for teaching and training had more or less built in, without intention, what is called a “Tunnel Syndrome” — the fact that the learners always had the feeling that they were sort of caught in the process, they just had to leaf through some pages and they had to keep learning some words or they had to keep answering something. Also, at some point they became tired of doing so and they wanted to do something different. Any good system must make sure that the “Tunnel Syndrome” does not arise. This means, for example, that you should be able to go back to the table of contents whenever you want, leaving maybe a bookmark at the point where you have left off so that you can continue at the same spot later on.
4. You should certainly have a large database or what I call a “background library” so you do not have just small modules whatever they may be—training modules for learning words or an explanation of the geography of Japan. That is not good enough. You must have substantial quantities of background material. Such background material today can very often be purchased from publishing companies. You can purchase from media companies full-sized encyclopedias that you can actually install on the server for your Internet site or in your universities or schools. You can purchase, for example, electronic atlases of the world that have ample details and are background information. You can, of course, purchase back issues of *Time* magazine for an English course so that whenever you want to have some additional reading you can point to a contribution in *Time* magazine that appeared maybe 10 years ago. Maybe you can even use it to show that the style of the language has changed in the last 30 years, even in such a respected journal as *Time* magazine.
5. The other thing is that learners should also know where they are. They should know how much of the material they have covered and how much still lies ahead of them and they should make sure and you should make sure at any point in the material that the learner knows when “I have finished and I have not forgotten any thing.” This is a problem with the hypertext approach. Your efforts to navigate around some universe of information leads sometimes to the result that you are always unsure of “Have I made it?” “Have I overlooked any important things that I should have looked at?” So you have to make sure that this kind of problem doesn’t happen and that has to be built into the system in some way or another.
6. Now one of the most important aspects in regard to individual teaching and training is the aspect of personalization. This means that if I read an ordinary book that belongs to me, I feel free to use a pencil or to maybe make some notes in the book. And of course, when I work though some materials in electronic form, the same possibility should be there. I should be able to make notes and I should perhaps even be able to make links to other material, maybe even to material out there on the web. I should be able to attach the added documents to the material so

that when I read this and my documents, I can find this material again. As a matter of fact, if I do this in a network environment, then I may actually open my notes to my friends or to my classmates. So these notes or these links of saved material in the background library may not just be links that I can see again when I revisit the same material, but links that other students who come to the same point can find. And of course, we all agree that the user should do more than mouse clicking and should actually be able to work in a serious fashion with the material.

7. The main point here is the last one. If we use a network system, we have to use it to break the isolation. When we use a computer-based teaching approach with stand-alone computers, one of the big problems is isolation, where one learner or just a few learners are sitting in front of a device. If they have any questions they can't ask either their peers or their teachers. So we have to use this network to break the isolation. We can do this by building in chat, by building in discussion forums that work both synchronously and asynchronously. And of course, we have to allow the students to ask questions, questions that will be answered immediately or perhaps later by an expert or by another student. I think this list—if a system for a network teaching and learning environment doesn't provide these features, then I think you should forget it. This is the list of minimum requirements every system must have. If you look at 500 commercially available systems today for teaching and training learning, depending on what you want to emphasize, you will find very few systems that actually satisfy even this set of minimal requirements let alone any other requirements you may have.

So far this has been from a users' point of view. Let us very briefly, but much more briefly, also look at the authors' point of view and the administrators' point of view. There is much talk about authoring tools. This, of course, depends very much on the area you are working in. In some areas authoring of material is not so important, because the learning is actually done by doing and the students do the authoring. Therefore authoring by the teachers or by some publishing company is not so important. In many cases the authoring of educational materials is important. We all know it is very time consuming if you want to produce, so-called, high quality course work. One of the things we have to learn is to reuse existing modules.

If you look at today's standards, developments occurring both here and I guess all over the world, you will find there is a lot of progress being made in the area of "meta-information." The main idea is to break up learning, to break up big learning chunks into smaller modules so you can associate meta-information and additional information with these modules. This is because only if you have this additional information will you be able to actually find those modules you are interested in from among, let us say, 5,000 little modules that are floating around somewhere on paper. Maybe you are only interested in modules at a certain level of complexity for a certain subject area. You can only do so if you not only break up the learning material into small chunks and small modules but you also have the techniques to relocate or to find these modules again.

It is my experience that this is the reason why videotapes in many areas of teaching have never attained the prominence that could have had. I have, for example, in computer science teaching, tried to use some of hundreds or literally more than hundreds of videotapes available from high-class institutions such as MIT or Stanford and from institutions in Europe and Japan. I have almost given up because it meant that I had to wade through hundreds of hours of material and then I would find that I could only use minute 82 to minute 84 of one of those videos in my class. So I ended up really wasting weeks and weeks just to put together a few video clips from various videos. What is the reason for this? The reason is because these videos are one to two hours long—they are not small chunks, they are big chunks and there is not enough meta-information associated with them. So it is difficult to find what we actually want within a particular context.

We have to make sure this does not happen again with the network multimedia. Remember, just putting meta-information with these modules and developing mechanisms to retrieve those that are of interest to you is not good enough. It is not good enough because sometimes these modules also do not fit in context—they do not fit in form and annotation—they use different colors. They use different fonts. They maybe even use different terminology. Even though they may fit all the principles of what they convey together, you cannot use them together

because you cannot be suddenly switching from a green background to a blue one or to a different kind of terminology, etc. This reuse of models is something many people are working on. The problem has not really been solved but the process is getting better and better. In addition to reuse, we should be able to customize material to the use of the groups that we are trying to teach.

Now, these are all sorts of standard issues that I want to deal with a little bit more rapidly. Of course, we have to have some kind of structural administration—in learning you do not just have students you also have tutors, you have authors, you have supervisors. You have a whole hierarchy of people involved. Of course, these people have to have different kinds of access rights and different kinds of rights to manipulate. You need good student- and course-tracking statistics. And you need feedback facilities—a topic with I will address a little bit later.

One of the most important things that I cannot over emphasize is the use of the powers of cooperation between tools. For example, if you look back at the use of the Internet five years ago, use groups were “in.” This was more or less before the WWW became so widespread. And if you look at some use groups and the ways you could use them, it is really surprising that, if you then look at the discussion forums in the current-day WWW context, these discussion forums are so much more primitive it is incredible. Many of the things we learned with use groups are not used in the WWW. This is nearly a joke. If you go to some of these web sites you will see only primitive discussion forums. This is in despite of the fact that in use groups you already had very sophisticated facilities available.

What do I mean by sophisticated facilities? Well, first of all, I mean if you have some kind of discussion, then maybe you want to display this discussion in different forms. At some stage you may be interested in the history of the discussion, the original proposition and the various arguments and counter-arguments that occurred. And you may be interested in seeing it in kind of a tree form or maybe in some other kind of graphical presentation. At some other stage you may want to see the same contributions but have them sorted by date, for example, so that you can see only the most recent form or, still better, only the ones that you have not seen yet. The system actually keeps track of all the contributions you have not yet seen and shows only those and not the others to you. Therefore you do not have to wade through all kinds of raw material.

Or, perhaps one of the people writing in this discussion forum may really start getting on your nerves because they are always bringing in the same old arguments. So you want to say “I do not want to see contributions from this person anymore.” Conversely, others may obviously really write intriguing remarks even in areas that are only of slight interest to you. So you may want to say that whenever that person writes a contribution no matter whether it is language teaching or history I want to see it. That is because that person always has something original to say. There are many ways here that are usable for displaying information, such as bulletin boards, discussion forums or whatever you want to call them. But unfortunately in most of the WWW environments that I am aware of this is very restricted, much more restricted than it should be. Of course, you should have search facilities so you can do full-text search of part or of the entire discussion forum. You should also be able to edit the discussion forum and edit ordinary documents. Of course, you should be able to edit pictures and convert files or what have you.

Another very important issue is that of different levels of anonymity. There is this misunderstanding that people are either anonymous or identified. As a matter of fact, you can find a real hierarchy between those who are completely anonymous and those who are completely identified. For example, if you have a public discussion in the university, you can allow students or participants to be completely anonymous. They just select their own penname and own password and nobody ever knows what that penname is—they do not know the connection between the penname and the real identity. That permits free discussion without fear of recrimination. But it also leads to misuse—perhaps people say some thing that should not be said. So sometimes restricting anonymity is quite useful. For example, in some of the public forums that we are using in our country, people can choose their own penname and identity. The connection between the penname and the actual person is known only to the system. There is a guarantee that this relationship between penname and actual identity will be opened only by a legal or court order and only in those cases where somebody is violating some of the laws in Austria like right-wing activism or pornography for instance. So this is another level of anonymity.

Another level of anonymity that I have found very useful is as follows: When I teach a course on the societal implications of computer science, I grade the students on the basis of the value of their discussion. But I do not want to know which student is saying what or using a particular argument. So students are allowed to choose pennames. Any one student can choose, if desired, up to three different pennames and may write under all of these pennames. I also usually choose two or three pennames for myself. I even built a style scrambler so the students do not know when Hermann Maurer is writing. The style scrambler permits me as one person under one penname to capitalize everything and to always make a particular grammatical mistake. This is done by the system on purpose. Students start to identify that penname with certain kinds of mistakes and another penname with other kinds of mistakes. The reason I choose different pennames or, so to speak, different personalities, is because I sometimes want to give forceful counter arguments. I sometimes want to argue against my own points if nobody else is doing it. The point is the students are anonymous to me, but my secretary knows their identity. Toward the end of the term I have a long list of pennames. I assign marks or points to these pennames and then my secretary, knowing that perhaps three pennames that the student selected are the same person adds them up and calculates the grade—the final grade from the total number of points. So I am involved in the marking process but for me these pennames are completely anonymous. If somebody has viciously attacked me in the discussion, I cannot be insulted. I am insulated against this person because I do not even know who this person is.

Now I will talk about notification mechanisms. This is something that is growing in importance, meaning that if I put a question or contribution to a discussion forum or on a bulletin board, I want to be notified when someone comments on it. Or maybe I am very interested in a particular topic; let us say, irregular verbs in language teaching or something like that. Whenever some new entry is made in some part of the forum I want to be notified immediately. This is what I mean by a powerful notification mechanism.

Here is one example of the use of such cooperative tools being carried out in a large European project involving 15 schools scattered all over Europe, and one that does involve English language teaching so it may be pertinent for this group. Basically what we did is form groups of 20 students, usually from different schools. They had to write an essay about some topic—politics, Shakespeare—you name it. The point was that after each of these students had written their essay, all of the other students had to comment on it. Of course this again means that you have to have an ability to make notes in a document that doesn't belong to you. You are not destroying the document; you are just overlaying your notes on top of the document. After this second round the students had the original essays as well as all the notes and observations, encouragement and suggestions of the other 19 students involved. For example, "Why do you formulate it that way?" or "Why do not you talk more about this?" and so on. In the third round the students had to take these annotations into account and prepare a new version of their essay.

This, by the way, is where version control becomes so important to the system I am talking about and the system you may be using in such a context. What you want, of course, is to have the old document with the annotations displayed and on top of that the new, resulting document. And when you read the resulting document, you should have tools that at anytime will allow you to see what the old document looked like and how these notes and annotations of the other students were taken into account. So this is where you need version control just as you need it in many other contexts.

This was the third round—the first round was writing the essays, the second round annotating them and the third round improving. But the fourth round is also interesting. We gave every student 100 points and they had to distribute these points according to what they felt were the better essays. So this introduced a ranking for these 20 essays. Again, the essays were edited using pennames. You could not do favors to your friends because you usually did not know who was hiding behind which penname. Anyway, doing this gave us a ranking for these essays and this ranking was actually taken into account by the teachers for the grades for that particular English class. What was interesting in a sense was that no authoring was involved. I mentioned before that sometimes there is no authoring involved. And, in this example that was the case. The students did everything—they did the essay writing, the annotating, the new essay and even the grading. Of course the teachers still looked at the results and determined the final grade, but there was no authoring involved in the usual sense of the word.

The Communicational and Co-Operational Component in Network Multimedia

Now, after this sort of fairly lengthy general introduction, I now want to tell you a story, to sort of interrupt this rather boring listing of important features. I want to tell you a story that I have stolen from a book for children in Italian. The story is called “Fish is Fish.” I modified the story a little bit to fit what I want to get across.

Here is the story of a very curious fish, a research oriented fish. This fish is swimming in the water and discovers at some stage that there is something outside of the water. Obviously sometimes the fish hits the shore so the fish is getting curious and wants to find out what is outside the water. What can the fish do? The fish can jump out of the water for a moment. The trouble is, first of all, the fish can jump out for only a very short time and, secondly, as soon as the fish jumps out every thing gets blurry. After all when you submerge your head in water without diving glasses, your view gets blurred, right? This fish keeps jumping and jumping, but even after many jumps the fish still does not really know what is going on outside the water.

Now the fish is lucky, because the fish has a friend, a frog and the frog can live on the land and in the water. So the frog tells the fish what life is like outside the water. But please observe what the frog is saying, what the frog is thinking, and what the fish is thinking. The frog, for example, says, “There is a flying animal” while thinking of a beautiful swan but the fish is thinking of a flying fish because it is the only flying animal the fish knows. Or the frog talks about animals with four legs and an udder with milk while thinking of a cow. The fish, of course, thinks of a frog with an udder with milk because it is the only four-legged animal the fish knows. Or the frog says, “There are even intelligent animals out there and sometimes they wear something on their heads, they wear silver hats.” The frog may be thinking of a man with a silver hat but the fish is thinking of an upright walking fish with a silver hat.

I think it is clear what this story is trying to get across. It is a story we all know but sometimes forget. When we tell something to a group of people or even to a single person, if we just tell it, if it is just one-way communication, then the knowledge does not arrive in the same form in the other person’s head as it resides in our heads. How information is understood when it is transported through my speech for example today will always depend on the background of those receiving this information, on their cultural background, their previous knowledge, etc. As a matter of fact, before I continue the fish story (it has a continuation, otherwise I wouldn’t have told it—it is too trivial. But it will become a little bit less trivial in a minute.) But before I continue this story, another story comes to mind, one that I think I will just insert here because it is a sort of a fun story as well as a true story.

After the Second World War there were many GIs, American soldiers stationed in England. And there were many love affairs between these men and the English girls but funnily enough these affairs turned sour very rapidly in most cases. It was such a strange occurrence that happened so frequently it was finally examined. Why would these love affairs turn sour so rapidly? The situation was investigated and it turned out you can distinguish 15 steps of courtship, so to speak. The first step is typically, say, the guy invites the girl for a cup of coffee. That is the very initial step. Inviting the girl to dinner is farther down the line. And maybe inviting the guy to meet the parents of the girl is much farther down the line, etc.

It turned out that these 15 stages of courtship could be distinguished and identified in both the English culture and in the American culture. They are the same except (and this is the interesting part) the order is different. For example, kissing in American culture comes fairly early. So to give a kiss in America really does not mean much, just to say good-bye or hello, or something like that. On the other hand, even a small peck in English culture comes very far down the line just before you start to be intimate. This difference explains what actually happened.

What typically happened was that a GI would take a girl to the cinema and after the movie he would take her to her house and would say good-bye and give her a kiss. At that point tragedy happened because no matter how the girl behaved, it was wrong. What were the options for the girl? The English girl was very surprised to get a kiss because they were just out for the first evening, and a kiss is very far down the line of courtship. So to her this guy is really being very fresh, really jumping ten steps of courtship. So what should she do? One reaction would be to slap the guy in the face. But if she did this, the guy would walk away and think, “This is a strange girl. I have not done anything wrong. We had a nice time in the cinema and I say good-bye, and she slaps my face. I do not want

to see her anymore.” So, that was the wrong reaction. On the other hand, if the girl really liked the guy and said, “Well I have perceived that this guy has jumped nine stages of courtship and I really like him” she might invite him in for a cup of tea or maybe a little bit more. The next day, the guy might say, “What kind of girl have I picked up? You know, I just wanted to take her to dinner and to the cinema and she invites me in to her house.” So no matter how the girl behaved it would be wrong, and would be wrong just because of the differences in cultural background. Yet they are really very similar. They speak the same language and even have the same rituals of courtship but in a different order. This is just an example of how greatly influenced we all are by background when we receive information.

This is what this fish story is also bringing out in a very clear fashion. Now as I have said, I would not tell you this story if there were not more to it. The point is that this fish is a research fish. So the fish eventually builds a television set. Through this television set the fish can now see what the swan looks like, what flying animals look like, what four-legged animals with udders for milk look like, or what an intelligent being with a hat walking upright looks like. So this, of course, means this new way of transporting information, not just by words as the frog had done but by using pictures, has improved the understanding of the world for the fish a little bit. But my point is this: It really has not helped the fish at all. The fish does still not understand the world at all. And I want to show at least two examples of why that is the case.

Think of it this way. When the fish for the first time sees a person on television drinking a glass of water, the fish is completely puzzled. What does a glass of drinking water mean to a fish? It clearly does not make any sense. Or, imagine the following scene: The fish is seeing a father and a son walking with some fishing equipment. They are walking with some fishing equipment and look very sour because it is early in the morning. They sit down and eventually they pull up a tiny little fish and start to murder it, to cut off the head, slit open the belly, all kinds of gruesome things and they laugh and smile. But it is not very funny for the fish at all. So you can see that despite the fact that the frog has explained some things, despite the fact that the television has shown some pictures, the fish still does not understand the world. Why is this? Because it is one-way information. So the punch line of the story is that you cannot really get information across just by talking or just by showing pictures or something. You can only really get knowledge across if you have a strong interaction between people. And this is why these cooperative tools or these communication tools are the keys to success when you use network multimedia. And whenever you do not use them in a solid way you are doing something dramatically wrong as I have tried to impress on you by telling you these rather trivial stories.

The Importance and Problems of Feedback

Here is my vision—a vision that I started to discuss and work on a few years ago. My vision looks and sounds very strange. I want to develop a system which has the following property: Whenever you see an entry document on the screen, you can ask it questions and the document will immediately give the correct answer to your question. Sounds like science fiction, does it not? Well, the answer is it is not really science fiction. We implemented a good part of this with Motorola a number of years ago and it works really very well.

Motorola is running a network, a WWW network of 70 educational institutions, which they call Motorola Universities. It runs on a system that we have developed. All of the employees of Motorola have a two-way contract which works as follows: When you become an employee of Motorola, you have to sign that you are willing to take two weeks of training every year, refresher training or something like this. At the same time, the company signs that they are going to provide the means to take this training by sending you to a seminar or conference or by provide in-house training in their Universities. For cost reasons Motorola has decided to try to provide some of the training in electronic form using network multimedia. So what they do is from time to time to put out a new module of information, maybe about failure review or maybe about some new company strategy or some new rules for applying for your holidays, whatever it may be. They put this new module on their WWW network and notify the employees. The employees have to look or work through this module within the next two or three months. They have a certain time limit and the system actually keeps track of who does it and who does not. If you do not do it within, say two months, the system will slap your fingers and say “Wait a minute, wait a minute,

you have not looked at this at all yet and you had better start to look at it.” So the system really makes sure that everyone works through this material.

The important thing is the follow-up done during the first few days after the module is put into the system. There is a team of experts available around the clock, 24 hours a day and seven days a week. Whenever someone asks a question, usually a typed-in question, this question is immediately answered not by the document, but by the expert. We have found that after the first 1,000 users, the questions tend to stabilize. There are no new questions. This means that these experts can go home after a few weeks. So, for the first 1,000 persons, the experts answer their questions. For the remaining 149,000 employees of Motorola, the system is answering the questions. This means that when you ask a question usually the document gives you the answer. And the reason is, of course, that whenever questions are asked and answered, the system stores away both the question and the answer. When a similar question comes in the system just has to decide if the question has been asked before and give the answer that has been given before, and the answer may be appropriate to whatever the question was.

Here is a little bit more detail. If you are using a network environment, like those that are now in school systems in Japan and university systems in Austria, or whether it is the Internet or Motorola, many hundreds of thousands of users are looking at the same document. Therefore, if you make sure that when the documents are first put up someone answers the questions, and if you make sure that the questions and answers are stored away in the system, then the problem is reduced by the similarity of simple questions. When are two different questions, X and Y, semantically the same? This is, of course, a serious problem. I may need to ask one question, and Professor Azuma may soon be asking the same question but using a different formulation. How does the system find this out?

Well, there are number of tricks, so to speak. One trick used by a number of companies is *fuzzy comparison*. Basically, you just compare where the same words occur. In this case, the system never knows whether this is really the same question or not and the system should not pretend that it knows if it is the same question or not. But the system should react as follows: “Thank you for this question. Do you really mean the following?” and then show a question that was asked by another person. If the person says “No, that is not what I meant.” the system will offer another question if another, similar question is available in the system. And eventually, either the system finds the right question and the user has used human intelligence to decide if it is the same question or not, or if the system does not find any more similar questions. In that case, the system will say, “That is a very good question. Thank you very much. We will answer as soon as possible and send you an e-mail when we know the answer.” Then the new question and answer will be stored away. That is the fuzzy comparison approach.

Now the other approach is one that we are actually carrying out together with a group in New Zealand. I happen to still be a professor at the University of Auckland in New Zealand and this is one of my co-projects. Massey University, on the northern island of New Zealand, has developed a rather nice technique as follows: If you restrict the grammar to a reasonable extent, and if you find an area-specific semantic network, then the system we have developed is now powerful enough that if you put in two different questions that are formulated differently, the system can actually tell whether they are identical or not. For restricted areas and for restricted grammar, this is possible. Now for a general user, this is not user friendly enough because you have to get used to the restricted grammar and you have to know a little bit about this semantic network to be able to work with it.

However, if you have a connection to experts this works great. Initially these experts are working 24 hours a day and seven days a week. That clearly means there are probably ten experts and these experts, of course, can easily be taught the restricted syntax and the area-specific semantics. So this means that if I am one of the experts and I get a new question, first I would reformulate that question using the restricted syntax and the area-specific semantic network and when I do so, very often the system comes back immediately saying “Oh, yeah, it is an old question.” I think “Just great” and it gives the correct answer. So this means that for certain applications like this, or for help applications, despite the fact that this is not terribly user friendly it still works quite well.

Now, what we first actually implemented for Motorola is, if you want to trivialize it, a location-specific, frequently asked question-and-answer corner. But, as trivial as it sounds, this is what we did for Motorola and it works pretty well. Here is how it works. Suppose the student or the employee has a question about media compression

and he activates a button that says “Question.” When the button is activated the student automatically gets a form and enters the question and can say it is just a remark or, in this case, it is a question and sends it out. When the student does this, the question is automatically sent to an expert. The expert gets an e-mail and in this e-mail is embedded a URL generated by the system. This e-mail is sent to me Professor Hermann Maurer, and so I click on this URL. By clicking on this URL, despite the fact that I am working on a completely different subject, I see the context in which the question was asked, I see the question that the student asked and I can now answer using a similar form of this question. This then goes back to the student. So the student receives the answer maybe half a day later, maybe immediately, depending on when the student asked the question.

This section has also been changed a little bit. There is a new question mark icon and an exclamation mark icon, and “video compression” is now marked. This means, to the next employee or student, that somebody has asked a question concerning video compression and an expert has answered it. That was one of the first things we did for Motorola and it worked wonders. Because, first of all, it meant that on some of these pages there are these icons, and if the next employee did not understand video compression, rather than typing in the question the first thing the employee can do is click on the icon and see the question and answer dialogs that have already taken place concerning video compression. In a certain sense it is, of course, a very trivial trick. It is really just a kind of “frequently asked question,” but in the right place—not a long list where you never find what you are asking for but at a point where it is important.

The other thing is that it is an incredibly nice feedback mechanism. Because the system keeps track of how many of these icons are floating around on a page, you can say, “Three icons on that page! Probably something is wrong with the page.” Maybe it isn’t explained well enough, because many people keep asking questions about it. So, not only is it useful for the students because they get an answer immediately, it is also useful for the authors, for the designers of educational material, because they find out where the weaknesses in the educational material are or maybe where students are interested in finding out more information.

Now the next thing I would like to briefly mention, because it’s one area where we have had many failures is how to obtain feedback on the quality of materials. Of course obtaining this kind of information is crucial but how do you get it—by interviews? Well, first, it is cumbersome to conduct interviews. If you do this, say if you present a course and at the end of the term you conduct interviews on the course, the learners will already forgotten many features. The students won’t remember all of the information you want to get. The same thing, of course, happens with questionnaires. Many students are so fed up with questionnaires that they really fill out questionnaires more or less arbitrarily. Actually we have made some intriguing tests. We have taken a questionnaire and given to a group of students and then a week later given it to the same students again and have gotten completely different answers. This shows how randomly sometimes questionnaires are filled out. So what we are trying to do is introduce techniques for what we call unobtrusive feedback collection. We try to find techniques where we can solicit information on how students like the material without having to go to the trouble of actually filling out questionnaires or having a two-hour interview.

One of the things we did is use so called “cluelets.” These are just questionnaires consisting of a single question which are thrown in randomly by the system and in such a fashion that no extra click is necessary. Typically at the end of an educational module the screen will say “Continue” and “Did you like that pair?” or “I liked that page.” or “I liked that background color.” or “I found the material of good quality.” While the second part says, “Continue, but I really didn’t like the quality of the material.” or something similar. So rather than just clicking at one place to continue the students would choose between one of two alternatives.

We also started to use location sensitive areas for buttons, so rather than just clicking on “Continue,” if you clicked to the right side of the continue button you would signal some kind of satisfaction. But on the left side you will signal that you were not satisfied and in the middle you would signal, “I don’t care” or “I’m neutral about it.” Of course, you have to instruct the students in how to do this properly but it really works quite well. It just means that, in the student profile, you keep track of whether the student has used this facility before or not and the first few times when they click on the right side of the continue or another button you ask explicitly, “Thank you very much. Do you really mean you liked the material or did you just click there by chance?” So you remind them initially a

few times that where they click on the button makes a difference and from then on they know it. Or, at least they know it during that session.

Now when we introduced these feedback mechanisms into some of the course material that we use at our technical and other universities in Europe, we got lots of interesting feedback. At the same time when we looked at the grades that students obtained in the courses where we used this technique, strangely enough the grades dropped. So we got the feedback but worse results. And that is how I painfully found out, as I have a number of times in my life, learning just in one area like computer science or mathematics is not good enough. Sometimes you really have to know other areas well also and, for example, I did not know enough about cognitive psychology. Of course I've learned a bit over the years. But, I should have known that this would happen and I didn't.

It's a well-known cognitive phenomenon that if you are interrupted during a learning process that part of your short-term memory is wiped out. This means, for example, that if you are reading a book and the telephone rings, and even if the telephone conversation is just "This is a wrong number," even if you have no conversation at all but have just the disturbance of the telephone ringing and your answering "Oh, no. You've got a wrong number." means that actually the last few lines that you have read are wiped off your short-term memory and therefore do not migrate to your long-term memory. If you continue reading from the point where you left off, you have made a mistake. You actually have to go back three lines and reread them.

Here is a most dramatic example of this. A simple computer program scrolls twenty words on the screen—everyday words—house, cats, snow, Japan, whatever. And after twenty words have been quickly shown on the screen, you are asked to write down all the words that you remember. Depending upon the person and the situation one would write a certain number of words. When I did it, I would typically remember twelve words or so. Next the computer program does exactly the same as before—again it scrolls twenty random words on the screen. After doing so, the program then asks you how much is seven times three. So you type in the answer, "twenty-one." Then again, you are asked to type all the words that you remember. In my case, the number of words I remembered dropped on the average from twelve to seven. So even this slight interruption of a multiplication problem erased a good part of my short-term memory.

This is what happens with these "cluelets" and the location-sensitive buttons. The students were in the process of learning information and this information or knowledge always passes through short-term memory into long-term memory but they had to suddenly think about something else. Answering simple questions or clicking on the left or right wiped out part of the short-term memory even though it seemed as if nothing had happened. The program would just continue with the next module. But quite a bit had happened. What they'd actually learned didn't stay in their heads. So this is one of these typical cognitive pitfalls that one runs into if one tries to work with these things without the support of cognitive psychologists. From this we have learned so that we have now founded an institute for knowledge management that includes cognitive psychologists and other non-computer scientists.

At the beginning I gave a list of typical minimum requirements that you need for a good working "general networked teaching, training, and learning environment" that we call, in abbreviation, "GENTLE." We have implemented this environment based on hyperwave. Hyperwave is a powerful service system, as was kindly mentioned by Professor Azuma earlier, that we have developed at our university using a staff of something like 200 people. It was a major effort and by now is actually a company with headquarters in Germany and offices in many countries of the world. Hyperwave is sort of a WWW system but it's much more than that. It can do much more and we are now using what call "knowledge management."

I want to just briefly say few words about knowledge management because all this educational stuff that we are talking about here in our heads today is just one little puzzle, one little piece within a much larger context and the context of knowledge management. It all starts with this phrase, which you may or may not have heard before. I heard it the first time from one of the board members of Daimler-Chrysler. "If our employees only knew what our employees already know, it would be a much better organization." This is an old story about an organization that has lots of reasoning power, lots of knowledge, sitting in the heads of the people but unfortunately others do not

know all that everyone else knows. These lamps of knowledge are sitting in our heads here as we sitting in this room but they separated from my head and each other's. If we could only combine them we would be a powerful team, if we really combined them well.

So the challenge is for knowledge management to collect without molesting, to unobtrusively collect, as much knowledge as possible from each person and to store the sum in a computer system so the knowledge will be more easily available to all. If you think about it, this is all that networked multimedia technology for learning is all about. After all, all we are trying to do is to get knowledge out of people who know something into the heads of other people—so in that sense it is knowledge transfer. This network supportive education that I've been talking about for quite some time now is really just one typical issue within this larger concept of knowledge management. And it is really rather intriguing as how much one can do these days with knowledge management. That would be a different talk and another presentation. However you should be aware of the fact that when we talk about any sort of education in the network environment, we are really talking about one tiny facet of this much larger area of knowledge management.

It may be of interest to you, because maybe not all of you are aware of it, but in Europe knowledge management is a fairly big issue and includes, not just management but also knowledge assessment. For example, each year, the largest insurance company in Scandinavia, Scandia, is not just providing a statement about the financial affairs of the company but also providing a statement about the knowledge affairs of the company. So there are gimmicks like the so-called balance scorecards that you can use to assess the level of knowledge of workers and employees in a company. Therefore you can actually find out that, during the past year the knowledge level of a company increased 3% or perhaps dropped by 11%. Typically, clever people will leave a company and the level would drop but if the company hires more clever people then the level would go up.

I just want to make this one point. When we are talking about education, we are really talking about one aspect of knowledge management and we should generally not think of it in isolation, as we usually we do. I mentioned hyperwave before. Basically it's a sophisticated WWW server offering much more than the usual WWW servers. It offers built-in databases, full text searching, etc. I just sort of made a few more points. I mentioned a few but this list could be continued for a long time. If you are really interested in hyperwave I suggest that you look at it on one of our websites. I will repeat the URL at the end of my talk. But let me just talk briefly about it just a little bit more. [N.B. URL not furnished.]

In the computer science world, if you store information and if you then retrieve the information, there are a number of possible paradigms for how you store it and how you find it again. Among these paradigms, the most common ones are based upon having some kind of directory or menu structure on your PC. There are some generalizations of this and hyperwave uses such a generalized version. However, hyperwave doesn't use just one directory but many overlapping directories. This means that you can access one item by several completely different bases. That's a fairly important feature. If you cooperate with many people, maybe one person poses an important piece of information from one point of view but another person who wants to find that piece of information has a completely different view of the world but still wants to find that item of information. That is only possible if you allow a combination of arbitrary overlapping directory structures.

This method of accessing information is one that you are familiar with from the directories on PCs with from a menu-based structure. Of course you are familiar with links used in WWW hypermedia systems, you are also familiar with searches, full text searches and you may also be familiar with attributes or meta- information. So you store not just the document but also this information about the document. For computer scientists we would say we are using a relational approach but here I'm using a somewhat simpler terminology by calling them attributes of the information in the document.

Assigning such meta-information to a document is very important and slowly the world of the WWW is recognizing this fact. It was first recognized ten years ago and it's slowly being recognized today so you may run into it more and more often. You see, if you put a document into a WWW server without information about the document, you are doing just about the same as if you glue a photograph into a photograph album without writing

down when the picture was taken, who is in the picture, where was it taken, etc. If you collect your photos in a photo album in this way and without this meta-information, without this additional information, your photo album is probably not worth very much after some time because you don't remember the details connected with this picture anymore. And that of course is what many people have been doing for a long time with WWW servers—they have fed in information but no information about the information. Therefore it is never clear if the information is still up to date and it also is not so clear if you could now delete it or not.

So the point is that, in most systems that we encounter today, some of these properties, some of these access paradigms are implemented but, except for hyperwave, there are really none that implements all of them systematically together in an arbitrary picture and that is really important. I can explain it this way: what if a student or some friend comes to me and says, "I'm going on a holiday. What kind of sweater should I take along?" This question is stupid because I have to know whether this person is going to Antarctica or to Fiji and depending on this I might recommend a fairly warm sweater or no sweater at all. Or, what if someone comes to me and says, "I'm building some kind of static database or some kind of server. What kind of techniques should I usually use for links or directories or searches?" This is also a stupid question. It depends really on the application and every application requires a different mix. This means that if you want to deal with this kind of thing systematically, you need a system that allows you all these kinds of mixes.

Now another thing that we desperately need for the WWW, one that was implemented already half a dozen years ago in hyperwave, is automatic link and data management. Jacob Nielsen, one of the gurus in the World Wide Web technology of open web applications, keeps estimates of how many broken links there are on the web. Today we have reached 8% and he is predicting that we will soon exceed 10%. Of course all of you have all found many broken links when you work with the web. What's the reason for this? The reason is that when you make a link from one page to another page in your web system, the page you are linking to, doesn't know about the link. This means if that page is removed or something, you have a broken link. In hyperwave we implement this knowledge and the document that is pointed to, knows which documents are pointing to it even if it is from a server sitting the other side of the world. Therefore, if the document is moved, the old links are adjusted automatically and if the document is removed all the links all across the world are automatically deleted and deactivated. Unfortunately, I can't go into the technical details even though how this is done is intriguing. I just want to say that this is possible.

There are many other things in hyperwave. I've already mentioned the importance of taking notes, making notes when I explained the essay-writing example. And not just in this connection, we you all need this capability when working with information. If you have one server and you find some interesting information on another server, you may want make a personal link from one server to the other despite the fact that you are not entitled to work with either of these servers. One can do this and one should be able to do this. This feature is supported by sound systems but it's not in general use yet and I would guess that only 10% of those of you who are sitting here today have ever tried to do this—to link two servers together when they have no access rights to either server, but it is possible. As I said before, if you are more interested in advanced systems of this kind, look up the URL later.

Some Provocative Questions

Now let me turn to the last part of my talk. Here I am going to be a bit provocative. The first question that we have to consider seriously is should we still learn foreign languages. The point is that the mobile phones that most of you are carrying today, five years from now, maybe eight years if you want, will actually work as reasonably good translators. You just take out your mobile phone, switch on the translator function and then talk into it in English and it comes out in Japanese or it comes out in Greek or it comes out in whatever language that you have chosen. These translators won't work perfectly. We are far from having perfect language translators as you all know. As a matter of fact we may never have such translators. I forget now where this quote is from but I like it very much. It says, "Who understands the language understands the world." It means that you cannot really translate anything fully correctly unless you really understand life completely and the world completely and we are far away from doing this with computers.

On the other hand we are very close, and not just close in that we have constructed translation software that does a fairly good job. My claim is that the better translation software that will soon be available will do a better job than any student after he or she has learned a foreign language for three years. If this is the case, if one day we have devices as small as this little pointer pen which I can just switch on to German and Japanese and then I talk in German and the person standing next me speaks Japanese, then why the heck should we still bother about learning foreign languages? I really think I am challenging you since you are all in language teaching. That's one story, but what about foreign language teaching?

One argument for foreign language teaching is that we need it because of globalization and because we are getting closer and closer and therefore it gets more and more important. I think this is a phony argument. That argument will be killed by technology. If your argument for foreign language teaching is we want to teach foreign languages because we want to understand people, the culture, the society, and the history, then I think that you have a valid argument. But I think we shouldn't cheat ourselves. Please realize that this is a message from an outsider. I'm convinced that we will have such translating devices available within the next ten years so I think we have to refocus our goals for foreign language teaching. Foreign language teaching makes sense for its cultural implications. But, as I have explained, I doubt that it will make sense for communication.

Since I am already trying to be little provocative. I would also like to say in fifty years written language will be as important for archiving and keeping ideas and emotions as knitting today is for the textile industry or phones are for communication. In other words, I believe that written language, as we know it today, is basically just a brief episode for humanity and will again more or less disappear. Of course a little bit of reading and writing will still exist for a long time, but only a little bit. Now I would like to briefly say why I dared to make such a provocative statement. I want to argue on the basis of, first on my historical, then my statistical, then my biological, and finally my technical reasons. In other words, I am about to give you four different arguments.

The first is historical. Many people think that having a high culture is connected with being able to read and to write. I would say that's not the case and I think you can prove it historically. Depending upon whom you believe, mankind is between one million and one point five million years old. Language is only six thousand years old. The first language signs as far as I know were discovered in Mesopotamia about 4,000 B.C. This is 6,000 years ago. At that time language existed and some people used some kind of a chisel to make signs on stone. But this wasn't widespread. But for those of you who may have learned Latin, Greek or Ancient Greek, at least in Europe, there is this little idea that in those days—in Ancient Grecian and Ancient Roman times—reading and writing were widespread. But that's not the case.

For example, the famous philosopher Socrates, refused to write. He always said that written forms killed the language. He said that as soon as you wrote something down, you froze it. You can no longer argue. He said that if I am with a person, I can see by the smile on their face or by the shaking of their head, their opinion and also this person can interrupt me. As soon as I write something down, I freeze the ideas and the language is dead. This is why he always said that it is very dangerous to use writing. Writing was known in his time but he refused to use it because he said that if we write things down we start to look at things very one-sidedly. And this is exactly what happened. Socrates was absolutely right. If I write paper today and I want to express a certain thesis, I emphasize the positive ideas. I never tell you all the topics that I'm aware of. I look at my thesis very one-sidedly. I do not give an objective opinion. Even as I talk to you now I am in a sense selling you some idea. I'm not being objective and you are not immediately giving counter arguments. So we have learned to freeze our ideas and present only a very lop-sided, one-sided view.

The irony of this is that Socrates didn't write down what he was thinking and preaching. His student, Plato, did and if Plato hadn't done so, we wouldn't know what Socrates taught. But Plato was also very bright, Plato said something like this: "Those who learn to read and write—into those souls forgetfulness will enter." And this is true. If you tell me your phone number, or your name and if I don't write it down immediately, I will have forgotten it within five minutes. We have such a beautiful instrument in our head but we are not using it for remembering anymore because with writing we started for the first time to use an external memory. To actually put things into an external memory. I'm using this word very purposefully because we are now continuing to do so with computers,

but on a much larger scale. We are storing more and more, not in our heads but in an external memory, more and more not just on paper but in computers.

Let me briefly continue with this historical argument because it is important. People will say “Well, reading and writing became widespread and the printing press was invented by Gutenberg in the 1500’s.” That is not true either because at that time only a small elite knew how to read and write. Excuse me if I’m not talking on a global scale. I am basically presenting you the European situation and there is variation with cultures. But in Europe reading and writing was not widespread, not even after the invention of the printing press. It only became widespread after obligatory education was introduced European-wide after the Napoleonic Wars. This was about 1825. So the majority of people in Europe have known how to read and write only since 1825 or thereabouts. This is less than 200 years. I want to tell you that in another 50 years we’ll be back to where we were before 1825. Some people will know how to read and write but most people won’t be able to anymore. That’s the historical argument. There were high cultures and flourishing societies that did not have a written language in widespread use but used it only for certain applications.

Then there are the statistical arguments. I know the numbers only for Canada, but in Canada, if we look at those people who do not need reading and writing for their job, only 20% of all of the people are still actively using reading and writing. This means that all of the other people are fulfilling all of their communicational needs through radio or the telephone. And, at Christmas they don’t send letters to Grandmother anymore but send a videotape of the baby or something like this. Even today, perhaps reading and writing from this point of view isn’t as widespread as it once was. This doesn’t mean that Canadians do not know how to read and write, they are just not using it anymore. They still know that “Coca Cola” is coca cola but maybe they don’t read the letters. Perhaps it is almost like a symbol mark. That is the statistical argument.

Perhaps my most interesting argument is the biological argument, one which I call the “missing organ thesis.” I want to discuss it with you. I claim that we humans are missing one very important organ. Let me explain. We have ears to listen and they are passive instruments. We have an active counterpart for the ears—the mouth. My mouth is currently making noises for your ears. But the most important sensory organ we have is not our ears but our eyes. Our eyes are passive instruments. They accept moving pictures, images, etc. And here is my punch line. We don’t have a “mouth” for the eyes. We do not have a “picture-generating organ.” I can generate real time noises for your ears but I cannot generate real time pictures for your eyes.

If I want to show you the most beautiful sunset I’ve ever seen in my life, how can I do it? Even if I have the photo with me and even if I showed it to you on the screen, it wouldn’t convey what I want to convey. Perhaps a little deer in the right hand side of the picture will distract you. But I don’t want to talk about the deer. I want to talk about the sunset. When I talk to you, when I generate noises for your ears, I can emphasize things, I can abstract or omit things, and I can exaggerate. So then I want to communicate with you using pictures I would also like to do this with pictures. I don’t want to just use some stupid photo. I want to get my points across in real time but I can’t. I have plenty of trouble even when not doing it in real time. The point is that we are missing many organs. We don’t have wings to fly so we have developed airplanes. We don’t have gills to swim under water so we have developed scuba diving and the submarine. We don’t have a picture-generating organ either so what should we do? We should develop a “prosthesis,” a crutch just as we have developed for these other missing organs.

My claim is that we are going to do so, and we are even in the process of doing so, by using computers. But here is one important point. If you believe in this little idea of the missing organ and that we are only starting to archive ideas and things not just in words but also in pictorial form, then let me make one thing very clear. Speech is something very natural because we have a mouth and we have ears. However coding speech into written form is almost unnatural. Maybe it is an historical accident because we had no other way for recording our ideas. I claim that in the future we will have other ways of recording our emotions and ideas and that new kinds of multimedia documents will include speech but not in written forms. They will be in spoken forms that include pictures and sounds and that also include also something that most people haven’t thought about at all yet but what I call abstract movies.

This is maybe the last important thing I would like you to take home from this talk. If you read a book and you liked it that is great. But if you have seen the movie about this book, you very often won't like the movie. Why is this? The reason is the level of abstraction has shifted. In the book you have read about this beautiful dog, a black man or this nice snow-peaked mountain, and built up certain images in your mind. In the movie, you get a concrete specimen of the dog, the black man or of the mountain and the movie doesn't leave room for your imagination. What we have to learn when we work with multimedia, when we work with movies and with pictures, is we have to learn to develop some new ways of doing this kind of abstraction so we can do with words what, at the moment, we can't do with pictures. We are not using pictures except in the very concrete and specific way and that is ruining our imagination, or at least limiting it and that is not good. There is a need to develop completely new notions for abstract motion, for abstract movies. This is a new way of communicating and archiving ideas and emotions that we will see in the future. It will involve speech so of course language is important, but will it include writing in the sense of how we know writing today? I seriously doubt it. It will be a completely new way of writing that will be much more dynamic and which will have pictures that change over time, diagrams that change, etc. Such abstract means of presentation which we will be using in pictorial form in the future, will of course have to be taught just as we are teaching reading and writing today. Please envision a time, in maybe 30 years or so, when students will not learn how to read and write for twelve years but will learn how to understand and compose the new kinds of multimedia documents that I am talking about. Mind you, I am not talking against language, I am talking about the way we code it today. We are still coding it today in a rather primitive fashion.

The reason this trend will be accelerated greatly is because computers will become omnipresent. When I talked to my students 15 years ago, I told them that in 2005 computers would be small and that they will incorporate the functions of the mobile phone and have Internet access. They will include translator functions and, of course, will really be videophones. They will be electronic wallets and you will be able to pay for things with them. They will operate as photo or movie cameras as well as as radios or TV. They will be very powerful with access to a network. (The WWW had not been invented yet). And, finally, they will also incorporate some kind of global positioning system. The students would always ask "But wait a minute, if the computer is that small or even smaller, how can I read something on it?" I replied that that is very simple. You just unfold it and then you have a nice screen, that surely some new kinds of display technology will be available by then.

Throughout my life I have made many predictions. Some of them have been wrong and some of them have been right. I made a prediction in 1962 when I was a student at Berkley that by 1990 men would no longer wear ties. I lost that bet and that's the reason why I have thrown away all of my ties and now wear only chains. With that bet I was certainly very wrong. With the small computer, however, I'm certain that I am right. This small computer will come your way via the mobile phone. Your mobile phone within a few generations will incorporate all the functions that have been addressed.

So the technology is now that of an omnipresent computer. The menu will be small enough that you can insert it as tooth filling. Energy consumption will not be a problem. Energy technology will be far enough developed that you will have a small turbine built into your belt and as your belt expands and contracts with you breathing it will generate a few milihertz of power for your computer. There will be completely new screen technology and there will be new input output devices. The foldable screen is already available. That's a pull out screen. It rolls up. You can roll it up like a curtain by pressing a button and it is still a full color screen. If you press the button again the screen appears again. But this is old stuff. The real thing is that you don't have any screen at all but you actually get information through your glasses. You have an optical fiber that communicates sound directly into your ears as well s communicates directly through projection from your pupils on to the retina. The picture on the retina of your eyes is projected on to the screen of some of these glasses. But here is one of the most modern ideas. If you cut away the cable on the right hand side and this is the kind of glasses that I'm wearing, this little spot here is where the pictures are projected through the pupil on to the retina of your eyes. Now you are really seeing three-dimensional pictures in full colors without anyone else even noticing that you have it turned on. The screen has completely disappeared.

Here is another model. I like this stylish green. This is much like an ordinary pair of glasses. This man is wearing ordinary glasses but here they provide hearing and actual project on he glass rather than on a screen. This

is what mobile phones of the future are going to look like. This is how you will hear and you will speak with your mouth closed. If you cannot already speak with your mouth close, then please start practicing now. You will need to be able to do this sooner or later. It will be completely obsolete to talk into your mobile phone by actually speaking. You will close your mouth to use this kind of mobile phone. If you can speak with your mouth closed then you will not bother others when you are using your mobile phone.

Other input devices—and there are many of course. This is a quite cute one. You have a little ring on your finger and depending on how much you bend it you will actually see what you are doing in your glasses, which you will be using in place of a screen, your cursor or letters or whatever you are doing. That's my favorite one. This ring consists of two pieces. One piece is fixed on your finger and has a little arrow. You can turn the second part. As you turn it, you will see on the screen or on your glasses, the letter A, letter B, and so on. When you see what you want, you will push it a little bit, making it an input device. Perhaps you are in a restaurant and under the table you are inputting a message and the person sitting across from you may not even notice that you are writing an e-mail message. I also like this one. It's a fabric keyboard that's already available in prototype. You just stitch it on your sleeve and then you feel along here. How do you connect all these things to the computer that is imbedded in your tooth and to your glasses? You can use contact with the human body. You don't need any wires nor do you need any wireless communication. Our skin conducts enough electricity that you can send all the signals through the skin.

These omnipresent computers will mean that all information will be easily available. What does this mean? Does it mean that we will still have to memorize things? Will we still have to learn facts? The surprising and interesting answer to this is "Yes." There is some new research about this called "source versus object knowledge." I just want to give you one example. Perhaps you read in *The Japan Times* this morning that Prime Minister Mori wants university information technology to help sustain economic growth in Japan. If you read this and, when you stored it, you also stored the content of what I just said and you also stored the location, *Japan Times* and the time and the date, July 29th, 2000. The interesting thing in the development of the human brain is that the content lobe, which stores the content information, is much older than the temporal and the location specific lobes of our brain.

So when you store away this information the fact of what the Prime Minister said will be stored in one part, the old part of your brain, (older in the sense of the development of the human brain) and stored the time and location elements in the newer parts of the brain. But these newer parts of the brain are not as stable and this is why this location information actually disappears more rapidly than the content information. That's why you can have so many problems remembering the simplest URLs. That's the way one finds that in older people memories always deteriorate. They still remember the stories but they don't remember the time and place. There is a very biological basis for this. And this means that we still have to remember the source even we use have a relatively good external memory on our computers. We still have to remember the source and fortunately or unfortunately, depending on your point of view, that's actually the most difficult thing part.

Now this omnipresent computer may also have some drawbacks and I'd like to finish my talk this picture showing you these drawbacks. You can see this family of cave people sitting around a fire and grilling a piece of meat. The father has his son sitting on his lap and is telling a nice story. The point of his story is that "And then one day the Internet collapsed." So let's just hope that we are not going to become so dependent on the Internet that indeed if it does collapse at some stage that this is what will happen to us. We have already had some scary experiences—any of you here from Auckland? During the energy shortage one and the half years ago, Auckland lost all electric power for six weeks, six continuing weeks. You cannot imagine what this meant to the city. A situation like this is, to an extent, almost unimaginable. All of Auckland was without electricity for six weeks.

Finally, I can only say thank you for your attention. It's really quite something that you stayed with me for more than one and a half hours. I really appreciate it. I also hope you got a little bit out of it. Thank you very much indeed.

A Sociocultural Perspective on Transfer and Transfer Studies

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Introduction

The title of today's talk includes the term 'transfer.' Maybe you are more interested in the transfer of cancer than that of learning. But I would claim in my talk that learning transfer is a very important issue for all people who are interested in foreign language learning and also in educational technology.

The issue of transfer is one of the classic issues in psychology and researchers on transfer regularly conclude that transfer is very hard to induce. For example, the famous psychologist, Detterman (1993), commented, "if you want people to learn something, teach it to them. Don't teach them something else and expect them to figure out what you really want them to do" (p. 21). Maybe this is true. If we are able to teach something, which is really important to students, we might do so, because transfer is hard to induce. According to Alexander and Murphy (1999) transfer of schooled knowledge and skills occurs far less often than educators and educational researchers hope.

This certainly poses a challenge to foreign language learning researchers. In foreign language learning, we usually try to teach something at school, expecting that students can apply the knowledge and skills to everyday situations to communicate with other people on general topics. But if transfer seldom occurs, especially the transfer of schooled knowledge and skills are very difficult to induce, then how could foreign language learning or teaching be effective? According to Detterman, we might send our children to foreign countries where the target language is spoken. I think that spending a few years in a foreign country where the target language is spoken probably gives enough experience for most children to be able to use that language effectively. But this is certainly impossible. Even though Japan is a rich country, we can't afford to do that. So we have to expect, if we teach the target foreign language at school, it can be applied to everyday communication.

What I'm going to talk about today is basically simple. I would maintain that, unlike the claims of Detterman or Alexander and Murphy, transfer is ubiquitous: When trying to solve a problem or comprehend an unfamiliar phenomenon humans always rely on their previous experience that seems relevant, unless they come to believe that such attempts are useless in particular sociocultural contexts like school. In other words, I am going to emphasize the importance of sociocultural contexts in the issue of transfer, as the title of my talk suggests. Although we psychologists have advocated a cognitivist view in recent years, I am convinced that now we are at the time to shift the view from cognitive to sociocultural, or more precisely, the time to combine cognitive and sociocultural views to build a more powerful educational theory (Hatano & Greeno, 1999).

The cognitive view assumes that if you have right knowledge, then you are supposed to be able to use it in any situation to solve transfer problems. In contrast, the sociocultural view denotes that knowledge and skills reflect the history — how knowledge and skills were acquired and have been used. We should not only consider the content of the knowledge and skills but also pay attention to the context in which knowledge and skills are acquired and used.

I would further assert that unfortunately school practice, at least traditional school practice, does not provide a good context for acquiring communicative competence in foreign languages. Why? This is because in the conventional school practice of foreign language learning, interesting ideas are not exchanged among students. Yet the language is basically a medium of communication. So in order to really motivate students to acquire a language as a

medium of communication, that language should be used as a means for exchanging interesting ideas. But in most schools, we seldom observe students engaging in conversation in a foreign language about interesting topics.

When I was a schoolboy we started foreign language learning with a textbook, something like “I am a boy,” “She is a girl.” Maybe the current textbooks are much better, but it is very rare that we can exchange interesting ideas using a foreign language in the classroom. This is one of the reasons why students are not motivated to use a foreign language as a medium of communication.

Another reason is that, in the conventional school practice, students’ performances are evaluated by teachers. And teachers do not pay attention to the content of their speech. Even when students are required to write something in English, teachers are more interested in whether the sentences are grammatically correct or difficult words spelled in the correct way and so forth. The teachers do not care the content of what students are proposing in the essay. So students often pay too much attention to the correctness of their use of the target language such as correct pronunciation, correct sentence constructions and correct spellings, ignoring the aspect of exchanging interesting ideas with others. As a result most Japanese students are really afraid of speaking a foreign language unless they believe they are good at it. When foreigners come to their campus, many students want to avoid contacting them even if the foreigners can speak Japanese. Students are afraid of speaking English in an incorrect way because they have been punished so many times by making slight mistakes in examinations.

I have just heard at this meeting a couple of presentations, which tried to use news programs in English teaching. I believe that this kind of attempt should be encouraged. My proposal is that foreign language learning should be done in the context of meaningful activities in the target language.

My talk will consist of five parts. I’ve already talked about pessimistic views on transfer held by a majority of investigators and my own optimistic view. To support my view, I would like to present a few of our research findings. First, I will talk about the case of transfer in abacus, my preferred example of automated skills. Then I am going to talk about the use of the person analogy by young children to predict and explain the behaviors of animals and plants. Next I would like to offer three educational examples in which the use of good contexts really changed the pattern of transfer. Finally I would like to propose some general theoretical ideas about expertise in schools and everyday life.

Transfer of Automated Skills: The Case of Abacus Operation

I would like to talk about transfer of automated skills. Many of you are familiar with abacus. An abacus is basically a device for representing and computing numbers. It can represent a particular number in terms of the bead configuration. Just by manipulating those beads it is possible to find an answer to addition, subtraction and other calculation problems.

You can learn how to operate the abacus just in a few hours. It’s quite simple to use the device itself. So, abacus learning at the later stage is almost completely geared to speed up the calculation. As a result, expert abacus operators have highly automated skills. Interestingly they gradually internalized the abacus operation so that they can operate the mental abacus, that is, the mental image of the abacus. In the end it’s not necessary for them to carry the instrument anywhere. They have the instrument in their mind. The internalization serves to speed up the operation, because when you move fingers, the calculation speed is constrained by the speed of muscle movement, but our mental operation is generally much faster than our physical operation. So by internalizing the abacus operation, experts can calculate extremely fast.

You may not observe the abacus quite often in the daily life in the present Japanese society but abacus skills have survived as a kind of special skills among a small number of enthusiasts. For example, many high schools and junior high schools have abacus clubs and if you visit that club you can see more than ten players practicing abacus operation for hours everyday. There are also tournaments and matches for these enthusiasts.

My collaborator and I studied a ten-year-old girl who was a junior national champion of the abacus operation at that time (Hatano, 1997). She was given thirty problems of multiplication of four digits by two digits (e.g., 3519×42) and three digits by three digits (148×395), respectively. She needed just 58 seconds to solve these thirty problems. She needed this amount of time to write down digits — since each answer usually included 6 digits, 180 digits had to be given altogether. So, for problems requiring the inverse operation (a 6 digit number is divided by a 2 digit or 3 digit number), where the answer should be just 3 digits instead of 6, she needed half the time, 31 seconds for 30 problems. And for these 60 problems, she made just one error. She calculated very fast and quite accurately.

Her skills were highly automated. This means that she can do other things while calculating numbers. You can see abacus players making conversation to each other while they are trying to find answers for problems. Of course, the conversation should be simple like “Which do you like better, cats or dogs?” However, they have some extra working memory by which they can do simple things while trying to find answers to calculation problems.

More interestingly, abacus operation is transferred almost automatically. Whenever expert abacus operators are given a number of digits, they try to retrieve their mental abacus to register them. Transfer is thus guaranteed. It is also observed among expert operators that the mental abacus is sometimes used for memorizing digits. Thus abacus skills are transferred to new situations — even though you study abacus at an abacus school, you can use that skill at a supermarket or anywhere.

Maybe some teachers are tempted to teach skills for using a foreign language in a similar way to teaching of abacus skills. A good example is a patterned daily conversation practice like “How are you?” Students are expected to answer in a mechanical way, “I am fine, and you?” After repeating this hundreds of times, they are quite good at repeating that pattern just like abacus operators can use the abacus automatically. Yet this kind of skill is not very useful in exchange of ideas. I often observe my students having great difficulty in answering when they are not fine. Some of them may invent an “innovative” combination like “I am fine but I am suffering from cold.”

I think that difficulty of foreign language learning lies in the fact that it doesn’t consist of a small number of fixed skills. Whereas you can learn abacus operation just in few hours, you need at least a few years for acquiring good command of a foreign language. Moreover, the language should be the medium for exchanging an infinite number of ideas. We cannot rely too much on the analogy between abacus learning and foreign language learning in our discussion of transfer, though highly automated skills are often transferable.

Spontaneous Person Analogy in Young Children’s Biological Inference

Now I am going to present another set of studies that show frequent transfer. That is the spontaneous use of the person analogy in young children’s biological inference (Hatano & Inagaki, 1996). Without any training young children often rely on the person analogy, that is, applying knowledge about humans to other animals and plants. For example, a 5-year-old girl remarked after having experienced growing flowers, “Flowers are like people. If flowers eat nothing (are not watered) they will fall down for hunger. If they eat too much (are watered too often), they will be taken ill.” It’s a nice person analogy that summarizes her experience of watering to flowers.

This tendency for personification is often observed in other situations as well. We asked questions like the following in our interview study: “Suppose someone is given a baby rabbit (or a tulip bud) and wants to keep it forever in the same size because it’s so small and cute. Can she/ he do that? Why do you think so?” Children often give answers like this: “We can’t keep it forever in the same size because, like me, if I were a rabbit, I become 5 years old and become bigger and bigger.” This is a very inventive answer. We asked about a rabbit. Of course, children don’t know the correct answer for a rabbit because they have never tried to keep a baby rabbit in the same size as before. But instead of answering, “I do not know” or “I have not learned that in school,” young children often volunteer to infer that a rabbit cannot stay in its small size, based on their knowledge that they are now 5 years old and bigger than before. By making use of the knowledge of themselves as human beings, those children can make educated guesses about rabbits. This is also a beautiful example of transfer.

We found for the case of a rabbit that 70% of the 5- and 6-year-old children interviewed made at least one personifying response to four questions, and for a tulip, 63%. In another experiment, we examined this phenomenon a little more systematically, posing different types of situations. We found that young children do not always rely on the person analogy. They selectively use the knowledge about humans only when the knowledge leads to an answer that seems plausible to them. In other words, the use of the person analogy is constrained by their knowledge about the target entity.

What lesson can we learn from this study? Now we are pretty confident that transfer itself occurs very often. Even young children try to apply knowledge about those familiar things (e.g., humans) to new situations. And their use of analogy or pattern of transfer is constrained. This certainly gives us some hope in the case of foreign language teaching. If transfer is seldom induced, there is no hope for the teaching of a foreign language. Students cannot use the foreign language learned at school as a medium of communication in other situations than school. But if knowledge is transferable, what is required is to find a situation in which students are really motivated and encouraged to use what they have learned as to the foreign language.

Three Example Practices that Enhanced Productive Learning

Let me move on to the more educationally relevant domains to see what determines whether transfer occurs or not. I'm presenting three examples, only the last one of which is about language learning.

Boaler's study.

The first one is a study by Boaler (1997). She compared two junior high schools in England. These two schools were pretty similar in their characteristics of students (e.g. socio-economic status, ethnicity, etc.), but were teaching mathematics in very different ways. In one of the schools, mathematics was treated as a set of well-defined rules and procedures represented in the textbook. In other words, "textbook mathematics" was taught in that school. In the other school, students engaged in a project and, in order to successfully complete the project they were expected to learn some mathematics. In short, both schools learned the same mathematical formulae, equations, concepts, and so on, but in totally different contexts.

In the first school, Boaler found that the students didn't see any relevance of mathematics to their out-of-school problems. That is, the students thought that mathematics was just a subject in which they had to solve presented problems, and that their performance was evaluated by the teacher — whether they understood the content of the textbook, applied the notion described in the textbook correctly to problems, etc. In contrast, in the second school, the students took mathematics as a tool for solving real problems. This, at least, suggests that if knowledge or skill is acquired to achieve some goal, that knowledge or skill is likely to be used to solve similar goals.

Similarly, we can teach a foreign language in quite different ways. For example, we can teach a foreign language as a textbook subject, in which students' performance is rated as accurate-inaccurate or correct-incorrect. Or a foreign language is taught as a tool for understanding or as a means to communicate with friends speaking that language. Students will take the foreign language quite differently, and accordingly use the foreign language in future quite differently.

Oura and Hatano's study.

The second educational practice is about music. My collaborator and I (Oura & Hatano, in press) studied the exercise process of two groups of piano students. The first group of students might be called "novices" in this context. The second group of students was called "junior experts." They were not experts yet, but they had had extensive practice in piano and some performance at a concert. They were given a short piece of piano music and required to exercise it until they thought it was ready to perform.

The novice students tried to exercise it repeatedly. All of them said that they should be able to play it more smoothly without making errors. So their primary concern was to play the piece accurately and smoothly, but no more than that. When they found that they could perform it smoothly without errors, they believed that they were ready to perform it. The junior experts were very different. Of course they were technically more advanced, but they needed even a longer time to practice the piece, because they tried to explore some new combinations of expressive devices like dynamics, tempo, and phrasing.

Interestingly the junior experts often referred to the perspective of the audience. That is, they often said that this pattern should be clearer or that the audience might not grasp this relationship, if they played the piece in this way. In other words, the junior experts were experimenting various ways of performance, so that their understanding of the musical piece could be conveyed to the audience. They had the notion of the audience — the audience usually do not know much about the piece, so playing the piece for the audience is certainly different from playing the piece for themselves.

I think this study tells us something about foreign language learning. Beginning foreign language learners are interested in the correctness, smoothness, naturalness of pronunciation and so on. If they produce correct sentence smoothly, they believe that their job has been done successfully. They have no notion of the listener. They are not interested in whether the produced sentence is comprehensible to the listener. More advanced learners are certainly interested in communication. How to convey ideas to listeners should be the primary concern for them.

In the Oura and Hatano study, some of the novices had practiced piano playing more than ten years. How could they stay in the stage of the novice for more than ten years? I think that their performance was somewhat similar to many Japanese students who have learned English for more than six years, but still are interested in the correctness, smoothness of their production, not in communicative competence. I would imagine that “experienced novices” are produced by two factors. One would be the teacher’s attitude. If the teacher too much emphasizes correctness and smoothness of the production, students may pay attention to that aspect as well. As a result, they are not interested in listener’s perspective nor in developing communicating competence. In contrast, if teacher tolerates some minor mistakes that are OK from the communicative point of view, and responds to the content of students’ speech production, the students are more likely to pay attention to the communicative aspects of foreign language learning.

The second one is the nature of practice. Novices and junior experts are engaging in different practices. Novices usually come to the teacher, and teacher gives a piece to practice. Next week or two weeks later, the novice students are expected, after practicing the piece at home, to play it to the teacher. And the teacher evaluates how smoothly and how accurately the novice students can play. In contrast, junior expert students may have the experience of playing the piece in public. So they are exposed to the real audience, not just the teacher.

Suppose this second factor can be applied to foreign language learning or teaching. It’s very important to have some listeners or readers for the production of students. If just the teacher evaluates the students’ produced sentences, either spoken or written, and the teacher pays too much attention to the correctness of the students’ performance, the students will remain at the novice level. But if we can arrange the setting so that students can communicate with some others using a foreign language, they will be able to pay more attention to the listener’s perspective and eventually they will be interested in developing communicative competence.

Lambert and Tucker’s study.

Our final example of educational practice is a study by Lambert and Tucker (1972). This study was done in Canada a few decades ago, but its results have some important implications for us. As you know, Canada is a bilingual nation. That is, all Canadians are expected to be good users of both English and French. However, even there, I am sometimes told, it is not quite easy to become truly bilingual. Lambert and Tucker thought that teaching a foreign language as a subject in school couldn’t be very effective. Students often complain that learning foreign language is hard and time-consuming; it imposes a burden on them; they have no time to study other interesting

things, etc. So instead of teaching a foreign language, they proposed to teach other school subjects by using a foreign language as a medium of instruction.

These investigators chose about 25 kindergarten children from English speaking families. They were monolingual and at the age of five or six. While they were in the kindergarten, their teacher who was from France and could speak just French taught everything in French for one year. Then from grade one on, the teacher taught most of the subjects using French instead of English. In the later grades some parents complained — teaching English literature by using French is funny. But still a number of school subjects including mathematics were taught in French.

This method of teaching school subjects by using a foreign language as a medium of instruction was remarkably successful. By the grade 4 or 5, those formerly monolingual children became all English- French bilingual; they had mastered basic components of French language, that is, vocabulary, pronunciation, phonology, syntax, etc; and at grade 7, they could discuss issues in French with native French speaking Canadians. Moreover, their English was not bad at all. Their performance in English was comparable to English monolingual Canadians of the same age.

It is certainly possible to learn a foreign language by using it as a medium to exchange ideas, to learn something new, or to communicate with distant people. It's a happy marriage between teaching of a foreign language and using a foreign language as a medium of communication. Whether the knowledge and skill acquired in one situation can be used in other situations depends on how they are learned, in other words, on the sociocultural context of the acquisition.

Adaptive Expertise in School and Everyday Life

As I said earlier, transfer studies have shown that students seldom apply school trained procedures. How about experts? Can they solve familiar problems quickly but not novel types of problems? Not necessarily. I proposed a term “adaptive expertise” in contrast to “routine expertise” (Hatano, 1982). Whereas routine experts have only modest capability in dealing with novel types of problems, adaptive experts can often invent new procedures derived from their expert knowledge. What we should aim at in education is to foster adaptive expertise. That is, we should not try to produce students who can answer such question as “How are you?” in a patterned way. Instead, the ideal students are those who can construct their answers depending on situations and their relationships with the conversation partner. In many subject-matter domains, I believe, adaptive experts can comprehend why those procedures they learned work, modify those procedures flexibly when needed, and invent new procedures when none of the known procedures are effective. The real problem is how we can produce adaptive experts.

School, at least the conventional school practice, is not a good context for acquiring communicative competence in foreign language or adaptive expertise in general, because there is no significant exchange of ideas and one's performance is evaluated externally just by teachers. I think the key to adaptive expertise is to change these conditions. In order to gain adaptive expertise, one has to be exposed to some new situations where they are expected to explore ideas and test them. Also teachers shouldn't be the ultimate authority in evaluation. More flexible, more multiple perspectives on evaluation would be recommended. If we are able to create such situations, foreign language could be learned more effectively and flexible and innovative learning in other domains could be realized.

Many people in school, I believe, have two conflicting wishes: One is to maintain the traditional cognitive view of teaching that emphasizes the acquisition of powerful knowledge and skills. And we are quite tempted to use advanced technologies for that purpose. I think that such attempts are useful but also have limitations. The other wish, which I have advocated in this talk, is to change our conception of knowledge to incorporate its history of acquisition and use in its component, in other words, recognizing that not only the content of the knowledge but also the history are important for its future use.

To conclude, I strongly believe that we should pay more attention to practices, activities, and contexts in which new ideas and skills are learned. We should also relax the format of schooling, so that students can be allowed to explore ideas themselves, instead of just being told the correct answer. They must be given multiple feedback, not just from the teacher but from others, especially from the partner of conversation. Through that process, they can internally evaluate their performance, and they can become adapted experts in foreign language and other subject-matter domains.

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“The Geeks Must be Crazy!”

The Ecological and Educational Validity of Technology-Rich Environments

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Introduction

Is technology transforming the language teaching profession and the language learning experience? If so, in what ways, and in which direction? To answer these questions we need to do three things: analyze the present, look into the future, and set aside our preconceived ideas and prejudices. All three tasks are very difficult, but the third one is perhaps the most difficult one. But let me begin with a brief look into the past, using Larry Cuban and David Tyack's historical overviews (Cuban, 1986; Tyack & Cuban, 1995).

Here is what was said about one earlier technological innovation: “The inventor or introducer of the system deserves to be ranked among the greatest benefactors of mankind” (Tyack & Cuban, 1995, p. 121). What was this marvelous system and when did this revolutionary event take place? It was the blackboard, and the year was 1841. Other inventions have been similarly hailed but not necessarily as ubiquitously adopted. Radio, film, the tape recorder, television, the overhead projector, the calculator, the photocopier, the language lab, and so on.

In reviewing these educational technologies, Tyack and Cuban conclude that “teachers have regularly used technologies to enhance their regular instruction but rarely to transform their teaching” (ibid, p.122). They suggest a variety of factors that may help to explain the apparent conservatism of teachers: the topdown nature of many technological implementations, problems with hardware, inferior pedagogical quality of content or programs, and more. But, they suggest, “perhaps the most fundamental block to transforming schooling through machines has been the nature of the classroom as a work setting and the ways in which teachers define their tasks” (ibid, p. 124).

Enter the computer....

Computers have been used in schools since the early 80s, but the major increase has occurred over the last ten years, and has accelerated since the widespread availability of the Internet and cheap desktop and laptop computers. From the start there have been opposing viewpoints on this development, ranging from techno-optimism to techno-pessimism (to use Mark Warschauer's terms, 2000), from geekism to luddism, from love to loathing. Interestingly, many commentators and teachers report having deeply ambivalent feelings about technology, harboring sentiments from both extremes, and suffering alternating spells of geekolia and ludditis. So then, a new neurosis appears to have sprung up, a kind of techno-schizo, panic-impressive personality disorder. The cure for this is withdrawal, or perhaps escape into the virtual shopping malls of AOL or MSNetwork. Or for teachers it may be marching the students down the hall to the computer lab, where full-service integrated courseware will do the job, supervised by TA's or lab sitters, and allowing the beleaguered teacher to retreat to the safety of the office, the classroom or the faculty lounge for an hour or so. The students are doing lesson seven, and quiz 2a. The computer as babysitter, as substitute, as drillmaster, as textbook.

On a brighter note, computers have the potential to “blow up the school,” as Seymour Papert (pioneer of artificial intelligence and creator of the computer language LOGO) once said (Cuban, 1986). The trouble is, when you blow something up you had better be clear that what replaces it is actually going to be an improvement. Surely, educational systems all over the world have room for improvement. So does my house, but I don't want to blow it up and sleep in a computer box. So perhaps we should interpret Papert's explosive metaphor as a prediction of educational transformation in a positive sense. Perhaps what will be blown up is the “2 by 4 by 6” (two covers of

the textbook, four walls of the classroom, six lessons a day) prison in which educational activity has been confined—and stifled, some would say—for centuries. Certainly, there are positive signs in this direction: the computer goes way beyond the textbook, making available a vast expanse of information on any topic under the sun via the Internet; the computer breaks down the classroom walls by allowing communication between people in different locations, via email, chat, online classes, and videoconferencing; and the computer allows teachers and students to do their teaching any time of day and night, and any day a week, whenever they want to and have time. In addition, the web-like nature of the Internet knows no subject boundaries, leading naturally to cross-curricular connections. So then, content, communication, time and space may be reconfigured dramatically. The teacher-centered classroom, with its transmission-based lecture-style approach, its focus on correction, imitation, regurgitation and a docile student body will have to disappear. In its place will be the autonomous, lifelong learner, and the teacher as guide and coach.

We have explored a few thoughts on both sides of the spectrum. I will now look at some much-debated aspects of the technological revolution, and see if we can glimpse a direction ahead. One of the most important issues is equality of access, equity, technological democracy, and the specter of the digital divide. Next I will look at the place of the teacher in this revolution. Then I will look at the learner and the learning process. Finally the technology-enhanced, technology-rich, or even technology-driven curriculum will be put under the microscope. We then send the case back to the people, because I don't think we are ready for a verdict any time soon.

Some Basic Questions

The following six questions were posited by Neil Postman, noted cyber-sceptic (if not neo-luddite), at a conference on distance learning in New York last year (Postman, 1999). These questions were a source of much discussion on the TESLCA-L list (a well known listserv on computers and language learning), and a brief overview can be found in Healey, 2000. Postman takes a dim view of all the hype about technology, and has written several books on this topic, e.g. *The End of Education*, and *Technopoly*. He's of course also famous as the co-author of a radical book about teaching published in the 60s: *Teaching as a Subversive Activity* (Postman & Weingartner, 1964).

- What is the problem to which this technology is the solution?
- Who will benefit and who will pay?
- What new problems may be created?
- Which people and what institutions may be most seriously affected?
- What changes in language are being produced by the new technologies?
- What sorts of people acquire new political power?

The suggestion in the first and third questions may be that technology does not necessarily address existing problems. According to Stoll (1995, 1999) computers don't care about existing problems: they are perfectly capable of creating their own, which they can then fix with more technology, and so on forever.

Who will benefit from technology? Administrators who need to brag and show visitors around? Corporations? Politicians? Teachers? Learners? The money spent on computers must come from somewhere. What parts of the budget are being reduced? What programs are cut? What provisions are there for maintenance, support and replacement?

Postman's last question is also an important one. An obvious answer is: the corporations. Or you might say, no, we all get more power, because the Internet is the ultimate democratic tool. Yes but....., when President Clinton made a highly publicized visit to some high schools to address the Digital Divide, he was accompanied not by teachers, not by teacher educators, not by working-class parents, but by CEOs of several prominent corporations such as AT&T and AOL. This provides food for thought.

Across the Great (Digital?) Divide

Basically, schools use technology to control disadvantaged students. Many schools in poor neighborhoods have computer laboratories equipped with drill-and-practice tutorial programs called integrated-learning systems. Students sit in front of these computers and follow the programmed routine, typing in answers to problems like “ $12 + 4 + 2 = ?$ ” Critics call this the “drill and kill” approach, and it would be hard to find a student who would disagree.

In contrast, in many suburban schools, students are likely to be able to manipulate computers, databases, spreadsheets, and drawing program—all of which allow them to create. They are able to express themselves and their thoughts and share that information with each other.

In other words, middle-class students are using technology in ways that will them controllers of their lives, while poor children are being denied that power. Practices like these serve to divide our society (Morrow, 1995:38).

It has been often repeated that half the world’s population has never made a phone call. Whether this is true or not is hard to tell. But it puts into perspective my insignificant complaint that in my street no cable modems or DSL, let alone higher varieties of wire, are available, so that I have to make do with a lowly 56K modem. The commercial puts me firmly in my ridiculously antiquated place:

Child (tearful): “Mom! Billy called me a modem!”

Mother (shocked): “I’m going to call his mother!”

Well, what can I do? Perhaps I should move to the street where the phone company is? Or should I just put up with the delays and watch the trees, flowers and birds through my windows while I wait for a Web site to load?

Now consider the following scenario. Confronting the digital divide, there is currently a program underway in the US, backed by the government and various corporations, to wire the poorest of schools and districts at significant discounts (the E-rate program). An elementary school in a nearby rural town, populated predominantly by immigrant and migrant children of poverty, is among the lucky ones to have been chosen to get wired at a discount. The first-grade teacher is an old friend, so when she told me they were being e-rated, I said, “Great, finally you are getting a break.” She did not look too happy, however, and I asked what the problem was. She explained that everyday for several months now she had to teach while walls and ceilings were being drilled through and knocked holes into all day long. Meanwhile she had one old Apple IIe in her classroom that had stopped working two years ago, and she had never received either support or training in technology. She was rather bitter about the whole experience so far.

Well, we might reply. Sure it’s a nuisance now, but once it’s all done you’ll be able to take full advantage of all the technological innovations and opportunities. Think of the future. Yes, but..... all this wiring is not free (discounts range from 20 to 90 %). And then hardware and software will have to be bought. And then there must be teacher development and support. And two years later the whole replacement cycle begins. It is estimated that for every 100,000 in upfront expenditure an annual cost of maintenance and amortization of around 35,000 must be budgeted. Who will pay for it all? What will be cut to make money available for these continuous expenses? Somehow I have a feeling that this teacher, and who knows how many others, would be happier with one decent Internet-connected computer in her classroom, and with meaningful training and support right now, than with promises of high bandwidth and the latest technology at some unspecified time in the future.

A chain is only as strong as its weakest link. The same is true also of digital equity. Let’s explore this briefly. Bronfenbrenner’s work in educational ecology (1979) proposes a context consisting of nested ecosystems, with various links along which decisions and influences can take place. He distinguishes between a microsystem (e.g. the classroom, the family), a mesosystem (the school, the neighborhood), an exosystem (the school district, the community) and a macrosystem (society as a whole, the educational system). The above example of e-rate shows

how top-down (macro → micro) and bottom-up (micro → macro) actions and interests can clash, with potentially serious consequences. There are many other scenarios that can be explored within this framework.

Let's look at the lowest scale, the microsystem. Here we are talking about what happens in the classroom, between learners and teachers, and whoever else ventures upon the scene. The context I want to illustrate is a group project underway in a fourth-grade class with both mainstream and minority students in the class. They are designing a website for publishing their English poetry. From several photographs taken in this class, a clear pattern is visible: a white student sits at the keyboard while Latino students sit behind as spectators (on a positive note, as a result of noticing this tendency the teacher reconfigured tasks and groupings to ensure equity). It turns out that middle-class children who have computers at home tend to control the computers at school as well. We therefore find that even if all other things are equal (hardware, software, etc.), children from certain socio-economic groups may still have unequal access at the classroom level. Other sources for unequal access may be gender (males have more access than females), academic subject (science and math classes have more access than language classes; see Schofield, 1995, for a detailed account of access patterns in an American high school; see also Bolt & Crawford, 2000). We also see from this example that there are connections between one microsystem (the family) and another (the classroom). When there are computers in the family, children tend to get to use them more at school than when there are no computers in the family. Parents less familiar with technology (particularly Internet use) also tend to be more reluctant to have their children use technology at school (in the above classroom, two children were prohibited by their parents from using the Internet at school).

Moving up to the next scale, the mesosystem, we can trace patterns of placement and distribution, curriculum integration, support, and collaboration among teachers, parents, and administrators. On this scale there are multiple sources of satisfaction and frustration. A very common source of both is the computer lab. Many teachers report that if they want to use the computer lab they have to book it up to several weeks in advance, making accurate planning and integration very difficult. A common result of the classroom/lab disconnection is that the "lab hour" is filled with work that is not or only tenuously related to classwork—usually a drill or language practice program for individual exercises, so that the computer is used as a tutor, not as a tool (Levy, 1997). On the other hand, where there is a well-supported and well-equipped lab, it may be a pleasure for teachers and students to take a regular trip to it. It may then become a place where exploratory learning and creative project work can take place.

The next scale, the exosystem, can be the locus of serious fault lines, gaps, or even chasms between what teachers and learners can do, and what districts, school boards and local influentia think should be done. Since this is the area where generally budgets and long-term planning are decided, corporations, politicians and sales people cluster there like wasps swarming around the queen. Here it may be decided that wires will run from A to B and C and all over, that X number of Y type computers and software will be bought from Z company, that labs will be installed in this or that location, with a maximum number of machines per square yard, etc. My observations suggest that the exosystem scale is usually disconnected, in terms of pedagogical concerns, from the scale below, the mesosystem (in the US, of course, this divide coincides with the off-site/on-site distinction). That is, concerns other than the actual teaching-learning process govern the decisions made here, and since the decisions made on this scale are fundamental and often irreversible, the exo-systemic scale seems to be crucial when we examine innovation and reform.

Finally, on the macrosystem scale we find governmental policy, funding agencies, mass media, corporate interests, and large-scale political and social forces. The e-rate program I mentioned above is an example of work on this scale. Other examples are "philanthropic" efforts of corporations to offer training, hardware or software (or a combination of these) to teachers. Of course such initiatives are nothing but soft-sell or not-so-soft-sell marketing campaigns. The corporation's products are the only ones showcased and promoted, and schools and teachers ought to be aware that the seductive samples offered may imply a loss of independence and flexibility a short distance down the road (and perhaps inflated expenses in terms of add-ons and upgrades).

Now let me try to sum up the equity debate. I have looked at the digital divide issue across the various scales of Bronfenbrenner's ecological model of nested hierarchical systems. I have also warned that a chain—or a nested

set of ecosystems in this case—is only as strong as its weakest links. I have exposed just a few glimpses of the various links or systems and given some examples of potential mishaps on these various scales, and possible clashes between one scale and an adjacent one.

Are the geeks crazy? Yes I think so, if they think that, by providing everybody with the same computers and the same access, educational problems such as systemic inequities can be solved. This does not mean that it is not a good idea to provide the technological infrastructure. That is one link in the chain, but many other links are necessary before issues of inequality can begin to be addressed. Until then, the wiring and hardware frenzy is nothing more than political propaganda and corporate advertising.

Teachers and Technology

In this section I will examine some of the ways in which technology affects language teachers. First we will look at professional development or teacher training (inservice or INSET, and preservice). Next, I will report some ways in which the daily life of teachers is affected, and how career prospects and jobs may be affected. Finally, some practical issues of teaching with technology will be addressed

A small-scale survey of language teachers that I conducted in the US three years ago yielded the information that basically only a minority of teachers had ever received any professional development in the use of technology. Furthermore, most of those who reported “some” training said that it was inadequate or useless. The few who reported that it was useful still indicated that it was insufficient and that more was needed.

It appears that in the last few years considerable efforts have been made to train teachers in the use of computers and other recent technologies. Education Week (Education Week, 1998) reports that “the vast majority of teachers have had some training in education technology. However, when this figure is broken down into more specific categories such as “basic,” “multimedia,” or “online activities,” the percentages drop to less than half for teachers who have had training in the more sophisticated aspects of technology use. Moreover, teachers in poorer districts are less likely to have received any training.

The state of California has published draft standards for technology competencies at two levels of proficiency. Politicians and local leaders constantly emphasize the need for more professional development. Funded projects now regularly include a budget for teacher training. Corporations such as Microsoft, Macromedia, and Apple offer free training to large groups of teachers. And so on... clearly a level of activity that has increased tremendously over the space of just two or three years, at least in the US. To what extent this is true also of other countries, if so, which ones, is not clear. I suspect that there is enormous variation from country to country, from school type to school type, and so on, along the same lines as the DD discussion above.

It would seem then that one of the key links in the chain: a well-prepared teacher, is being strengthened. However, there are a few worrisome spots on this rosy picture. Let me list them :

1. Many teachers resist and reject, or are reluctant to embrace, technology, for a number of reasons that cannot be dismissed as irrational luddism.
2. In spite of reports that indicate ever-larger percentages of teachers that “have received technology training,” the overwhelming majority of teachers I meet and talk to report they have either received no training or woefully inadequate training. Interestingly, almost all tech-savvy teachers that I meet report that they are completely or mostly self-taught.
3. Most technology training is conducted as one-shot sessions that focus on technical rather than pedagogical aspects.
4. The technology component of preservice teacher preparation is reported to be completely inadequate.

5. All teachers (I have not encountered any exceptions) want training that is hands-on, on-site, ongoing, and includes a level of sustained in-class support. This type of training is rarely if ever available.
6. Teachers report frequent problems of hardware and software failure, outdated equipment, lack of availability of resources, etc.
7. Working with technology is extremely time-consuming and labor-intensive, far more so than traditional chalkboard and paper lessons.

It seems reasonable to conclude, then, that the link of teacher development and professional preparation is still rather weak. Moreover, there is an enormous knowledge and skill gap—among otherwise well-prepared teachers—between the least and the most well-prepared teachers. Is this problematic? Not necessarily so according to the views of at least one teacher, who compared computer geekdom to musical ability. He explained that many teachers like to take a guitar to class and lead the students in song, a highly appreciated and successful practice, but not one that all teachers can or need to possess. In fact, for a successful institution it is better if teachers are experts at a variety of different things. So, if there are a few teachers who lean towards geekdom, then that is beneficial and sufficient. Not all teachers need to be geeks.

This sounds reasonable enough. Yet, we expect all teachers to know how to use the blackboard and the overhead projector, and be able to manipulate other tools of the trade. Aren't computers tools that every teacher needs to be able to work with, at least up to some level of competence? Furthermore, elementary school teachers and secondary subject matter teachers cannot usually rely on colleagues to provide complementary expertise. And, as a ubiquitous saying goes, computers will not replace teachers, but in the future teachers who cannot use computers will be replaced by those who can.

Thus, we end up with the conclusion that the great majority of language teachers will need to have some sort of knowledge and skills about computer use. The best practice that I know of is to ask them, by way of detailed needs analyses, what it is that they think they need to know and do, and then design professional development that assists them in getting where they need to go.

My next question is how technology is affecting the daily life of the language teacher. Whenever I ask that question on surveys and in meetings, the most common answer is that they have made teaching both easier and more frustrating. Further probing reveals that computers save teachers time but that working with them is also extremely time consuming. There was also a recent survey that cited technology as the third leading cause of stress for teachers. In short the issue is not clear-cut: computers are neither universally hated nor universally loved by teachers. They can be both a significant source of professional satisfaction and a major source of stress.

We might go through our nested ecosystems again and see some sources of success and frustration at the different scales. I cannot do this here, but recommend it as an illuminating activity for a teacher or an institution. Let me just cite a few examples. I have already mentioned the macrosystemic problem of forced consumption of wiring, (and hardware, courseware) without microsystemic support or input. There is also the district that has decided to buy only Intel computers and Microsoft software, so as to make support easier and receive "free training" from Microsoft in the use of its products. And the school where a new lab has been put in and the teachers are told to "go and use it." Set against these frustrations are the successes of teachers who, armed with knowledge, have gone to their administrators or to funding agencies and specified precisely what they needed and why, and who have found an unexpected level of willingness to listen, thus ending up with well-designed and pleasant environments to work in.

The classroom or lab is the most frequent source of satisfaction or frustration. Teachers who are used to teaching communicatively using collaborative tasks and projects find that it is impossible to work in a traditional computer lab. Usually such labs are crammed full of computers in rows with hardly any space to move around, work together, or see each other. These labs are only suitable for solitary processing or drill work, but not for the

sorts of creative and interactive project work that can make computers a positive force for pedagogical change. However, working with a few or even just one computer in the classroom can be a positive factor for such teachers. And labs that are designed to promote social interaction as well as computer interaction can do the same thing.

The most frequent failure reported by teachers and researchers is due to teachers who continue to teach in a teacher-fronted, transmission-style way after they have decided to incorporate computers. This is a sure-fire recipe for failure, since computers demand a different approach. They demand a more autonomous learner, a learning task that is not entirely predictable in terms of procedures or outcome, and a teacher who is not the sole bearer of knowledge and authority. These are not easy things to adjust to for a teacher who is used to being the center of attention and the sole locus of authority and knowledge.

Let me illustrate some of the classroom-level dynamics influenced by technology with a few vignettes:

1.

I wrote a proposal for a grant to have two computers in my room and began the process of undoing my classroom structures so that I could take advantage of those two machines. Gradually, I tried new groupings, more interaction, less whole-group direct teaching, and I could sense the students' self-confidence grow as they became more independent ('Marian,' in Newsom 1996: 205).

2.

When I brought that first computer into the classroom I was faced with a problem. Since the kids couldn't all work on the computer at once, I realized that this was going to infringe on my whole-class lecture method. The solution was to leave my "sage on the stage" posture, move to a learning centers approach, that had technology in one or two of the centers, and adopt a "guide on the side" philosophy that allowed kids to work more independently and allowed me to move about the room and work with small groups of children ('Chris,' in Newsom 1996: 204).

3.

The students ... continue to have a lot of very nitty-gritty problems. Kathy can't get the printer going ... She's scowling and says in an annoyed tone of voice, "Please help me." Mr. East suggests several things, and after they try out four or five different approaches they finally get the paper to print out. Ms. Prentiss has been working with Sharon on word processing ... For the last 10 minutes cries like, "I don't believe it," and "Oh, no. Not again!" have been emanating from both of them ... Finally, Ms. Prentiss calls Mr. East over ... Sharon is clearly getting anxious, pacing around, picking her nails, and the like. She takes her disc and inserts it in another computer hooked up to a different printer. She can't get this printer to work ... Ms. Prentiss rushes over to try to fix it saying, "I just don't believe it!" Ms. Prentiss comes over to me [the observer] and says, "I feel like quitting this ..." At this point Mark calls to Ms. Prentiss, "I need help ..." Ms. Prentiss puts her head down on the desk briefly. She looks at me with what appears to be a mixture of mock and real despair and trudges over to Mark. [Later in the same period] Dan is trying to use a printer that Mr. East thought he had fixed. Dan's essay comes out quadruple spaced. In addition, every single word is underlined. Ms. Prentiss looks at it and breaks into almost hysterical laughter. Dan looks annoyed. Ms. Prentiss says, "I'm sorry, this is just too much—too, too much! ..." Mr. Adams and Mr. East are still working on the second malfunctioning printer. Mr. Adams says, "You know I have a trick. What I do with my Radio Shack computer is just turn it on its side and hit it. Maybe that will work here ..." They turn it on its side and give it a whack as one of them holds the tension on the paper feed. The machine begins to work. (Schofield 1995: 126-7).

4.

When I walked into Mr. L's room, I saw 6 late-model Pentium computers lined up against the back wall of the classroom. Mr. L., a high school teacher of Spanish, had written a grant proposal and received a donation of six computers and an Internet connection. At first everybody was quite excited, and students were allowed in turns to use the computers to browse the Internet, doing "treasure hunt"

types of activities, while Mr. L. continued teaching the class in the usual way. After a while, he reported, things deteriorated, students ended up on the "wrong" web sites, and the computers became a disruptive element in the class, upsetting the regular routine. "I'm not letting anybody use them any more during classes," Mr. M said. "It's just too much of a nuisance."

5.

A writing class in a university ESL program. The computer lab is quite nicely set up, with computers placed against the walls and a table in the center for regular paper-based work and tutoring. Students work on their essays individually on different computers, but there is a lot of movement as students ask each other for advice and help each other. The teacher sits at the center table and works with individual students in turns, going over their drafts with them.

At one computer a young man sits, motionless, his hands on his knees, staring at the screen. Once in a while he looks around, but his face appears expressionless and tense. Since the beginning of class he has neither spoken nor moved a finger towards the keyboard or the mouse. After about ten minutes the teacher asks another student, a young woman, to go over and help him. She suppresses a grimace, gets up, and sits next to the young man, and starts explaining about formatting, centering, paragraphs, etc. The young man continues to stare at the screen, not looking at her nor indicating that he does or does not understand. She does the clicking and typing for him.

The Curriculum and Learning

The most urgent problem for educators is not how to operate computers, write activities or learn how to use various programs and applications. The most crucial task is to learn how to integrate technology into the curriculum in responsible, meaningful, and effective ways. If technology takes time and money away from important activities and content, and replaces them with inconsequential drilling or fiddling, then it is a detriment to education.

In terms of money, I know many instances where technology has caused the cancellation of worthwhile programs such as field trips, music, physical education, and so on. In other contexts teachers report that increased technology has meant decreases in teacher hiring, higher teacher-student ratios, and increases in hiring adjunct rather than permanent faculty (the latter is particularly true of online programs).

In terms of time, every hour of electronic (online) teaching requires up to 100 hours of preparation. Teachers spend countless hours making interactive activities using HTML, Java Scripts, HotPotatoes, and so on, but even though it is immensely satisfying when they "work," these activities are not necessarily superior, in pedagogical terms, to the ones that used to be handed out on worksheets. The worksheets took a fraction of the time to produce compared to web or desk-top based activities.

In class, teachers may spend significant portions of time fixing problems with machines and programs (see vignette 4 above) rather than working with the students on the subject matter. I cannot count the times that I have attended meetings at conferences where the first 15 minutes or more of a presentation were wasted on trying to get a laptop to work on a projector. In the end the presenter often has to go to "Plan B" and use backup overhead transparencies, but meanwhile a big chunk of the presentation is gone. In how many cases, across educational systems, does technology lead to a net reduction in productive instructional time?

So, the question: "Is it worth it?" is certainly a legitimate one. How can technology enhance the curriculum and not interfere with it? Perhaps the first two vignettes above give one of the clues. In both those cases the arrival of the computers meant a transformation of teaching into a more collaborative, activity-based style. Given that current perspectives on language learning and teaching emphasize exactly these qualities, computers should be able to act as catalysts to achieve a change to more effective learning and teaching practices. But they do not do so

automatically and inevitably. As we have seen, there are many ingredients that need to be present for the effect to become a positive one.

Conclusion

When , in the movie “The Gods must be Crazy,” that coke bottle landed in a community of Khwai (‘Bushmen’) in the Kalahari, it was an unknown and mysterious object to them. They thought it was a gift sent from heaven. Little did they know it would cause so many problems that their leader had to carry it to the end of the world and throw it off.

The computer lands in our midst, perhaps in our classroom. Will it be an instrument of mischief just like that coke bottle? We do not know.

It is a truism that we cannot turn back the clock and uninvent or disinvite the computer. What’s more, we have no idea (or only a very dim one, see Gelernter, 2000) of what is in store in the coming years. It is clear that as language learners, teachers and teacher educators we need to make our accommodations with the new technologies. Our only hope is to control THEM for pedagogical enrichment rather than be controlled BY them with possibly dire consequences.

In order to do so we need to struggle to understand technology and harness its power in the service of sound pedagogy. This includes at times fighting corporate, political and bureaucratic interests in the defense of good education. It unfortunately means the duty to own our technological knowledge together with our fellow teachers (rather than rely on expertise sold by non-pedagogical interest groups). It is in most cases an extra burden on top of already excessive work loads, and we should fight for recognition wherever there is a chance, but whichever way the cookie crumbles, it is essential for teachers to be the guardians of the best possible education for their students. Fortunately, there are some payoffs. Computers can make our lessons more interesting, they make resources available that are otherwise hard to find, they motivate the students, and they may make teaching and learning more exploratory and interactive. These are benefits we should be able to capitalize on.

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Some Digital Divide Websites

The Digital Divide Network:	http://www.digitaldividenetwork.org
ChickClick ("Girl sites that don't fake it"):	http://www.chickclick.com
Girl Tech (educational):	http://www.girltech.com
Institute for Women and Technology:	http://www.iwt.org
LatinoLink:	http://latinolink.com
National Urban League:	http://www.nul.org
Picosito:	http://www.picosito.com
One World:	http://www.oneworld.net
Panos (Information and communication for sustainable development):	http://www.panos.org.uk

Networking Society and Education

This article is in Japanese and therefore not all of it may be readable without the Japanese version of Acrobat.

Takashi Sakamoto

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G 8 教育大臣会合・フォーラム

平成 12 年 4 月の初旬 G 8 教育大臣会合・フォーラムが東京で開かれた。今日の最重要課題 4 つのうちに、生涯学習と遠隔教育、教育革新と情報通信技術の 2 つが入っており、これからの教育において、衛星通信、大容量光ファイバー、インターネット等情報通信技術の飛躍的發展を基盤にした、国内の大学間の協働や国際的なネットワークの構築の重要性が強調された。

議長サマリーでは、生涯学習と遠隔教育に関しては、合意事項として、5 項目が指摘された。

- 1 . 児から高齢者まで、生涯を通じていつでもどこにいても教育にアクセス
- 2 . 公的、私的部門による遠隔教育に関する国際協力を奨励
- 3 . 略
- 4 . 遠隔教育に関し、関係機器案と専門が経験を共有
- 5 . 授業、訓練、研究のためにインターネットや衛星を活用、開発途上国との協力、大学での協働

教育革新と情報通信技術（ICT）に関しては、「情報・コミュニケーション技術（ICT）は、社会全体に対して、学習機会へのアクセスを拡大することや、児童生徒の理解力・創造力を深めることを可能にする潜在力を持つものであり、教育の内容を豊かにし教育機会提供の方法を変える展望を与えるものである。また、情報・コミュニケーション技術は、学校、職場、さらには生涯の全般にわたり、個々人が入手した問題を解決する能力を高めるための道具である。」と述べ、6 点について合意している。その第 5 と第 6 は次のものである。

- 5 . 教員がテクノロジーを教育に効果的に活用できるような方法や、児童生徒が正確で適切な情報を選んで利用したり、発見や学習や教育上の達成のための適切な道具として技術を利用できるようにするための方法について、情報を共有すること
- 6 . 教員、研究者、技術者、行政関係者などの専門家が、今後新しく開発されるテクノロジーを実際に教育の課題に活用していくことについて協力できるよう、国際的なネットワークの構築を奨励すること。

情報・コミュニケーション技術を活用した、遠隔教育の重要性が深く認識され、教師教育に活用される可能性を大きく広げる方向の施策が世界的に展開することを示唆している。

教育の場に、大々的に情報通信技術が導入される方向である。

これは、平成 11 年 6 月のケルンサミットでケルン憲章が発表され、すべての子どもに ICT の能力が不可欠であるとされたことの流れを受けている。平成 12 年の九州・沖縄サミットでも IT 革命が中心課題の一つとなっている。

学校への情報通信技術の導入

今や、世界主要国は、国の責任者が先頭に立って、学校教育に情報通信技術を導入しようと、まさに競争状態にある。アメリカでは、クリントン大統領とゴア副大統領が1996年2月に技術活用能力向上策を掲げ、すべての生徒が技術活用能力を持つことを強調している。「すべての子どもがコンピュータに触れ、理解し、よいソフトウェアとよい教師、そして、インターネットに触れねばならない。そこで、すべての人が自分の人生を最高に創る機会をもつことだろう」という。イギリスでは、ブレア首相が全国学習格子計画を1998年より実施し、オンライン学習・教育用教材を探し、活用する手段とし、ネットワークによる教育サービスを提供し、教師と図書館司書の技能を伸ばすことを主張し、2002年までに、すべての学校が無料でスーパーハイウェイに接続、50万人の教師を訓練、すべての子どもが卒業時にITを使いこなす能力を身につけることを提言している。フランスも1998年にジョスパン首相が情報国家導入準備計画をうちだし、6つの優先課題の第1に、教育における新情報通信技術を取り上げている。そこでは、未来の市民に必要な新しい通信の道具の使い手を育てること、および多様なマルチメディアを教育現代化に役立てることをねらっている。北欧諸国、カナダ、オーストラリア、シンガポール、韓国等国も国を挙げて取り組んでいる。

このことは、世界の主要国の学校にインターネットが導入され、お互いに交流可能な環境が整いつつあることを意味している。

高等教育における情報通信技術の活用

高等教育の分野でも、最近では、インターネットや通信衛星を活用した遠隔教育とかバーチャル・ユニバーシティの展開が著しい。

アメリカでは、連邦政府教育省の教育統計局の調べによると4年制公立大学の78%が遠隔教育を実施している。多くは、コンソーシアム型で、いくつかの大学を仲介する機構が学習者の要請に合わせて大学の適切なコースにアクセスできるようなサービスをしている。仲介機構自体が学位などの資格を与える場合もあるが、たいていは、学習者は特定の大学の資格を取ることになる。前者の例は、西部州立大学で、後者の例は、カリフォルニアバーチャルキャンパス、コネチカット遠隔学習コンソーシアム、オンラインコネチカット州立大、ニューヨーク州立大学学習ネットワーク、ペンシルバニアバーチャルユニバーシティ、テキサス大テレキャンパス、などである。このほかに、独立遠隔大学もある。ジョーンズ国際大、フェニックス大である。カナダにもテレラーニング卓越センター、オーストラリアにも遠隔学習連合、ドイツにもベルリンバーチャル大、フランスにもフランスオンライン大、韓国にも公開サイバー大などがある。

日本でも、情報通信技術を活用した遠隔教育が始まっている。昨年度から、同時双方向のテレビ会議形式の遠隔授業で60単位まで単位認定ができるようになっているが、これが近くインターネットによる教育に拡充される可能性がある。

平成12年6月1日生涯学習審議会は、「新しい情報通信技術を活用した生涯学習の推進方策について(中間まとめ)」を発表した。そこでは、大学・短期大学・高等専門学校で、「今後は、衛星通信やインターネットなどを活用して、広く全国に高度な学習機会を提供するなど、より一層地域に開かれた高度な学習機会の提供拠点としての役割を果たし、高度化した学習者のニーズに十分に対応できるようにすることが重要である」という指摘をしている。

平成12年6月30日大学審議会は、「グローバル時代に求められる高等教育の在り方について(審議の概要)」を発表した。そこでは、インターネットを活用した授業で60単位までを認定できる、外国の大学のインターネットの授業単位を60単位まで認定できる、日本の大学がインターネットで海外に大学教育をし、60単位まで単位認定できる、

通信制の大学では、30単位までインターネットで面接授業に変えることができる、という方向の提言をしている。これらが実現すれば、通信制の大学では、124単位全部をインターネットなどの遠隔教育で与えることができるようになるし、通学制の大学も海外に一層開かれたものになる。

こうした文教行政の追い風を受けて、いろいろな遠隔教育が展開している。先駆は、メディア教育開発センターに中央局を置くSCSである。スペース・コラボレーション・システムといって、大学間の同時双方向の授業交換システムである。現在、120大学等に143の地上局が設置され、講義、ゼミ、研究会等を大学間で交換している。京都大学、東京大学等大きな大学には、複数の地上局が置かれている。私立大学も、早稲田大学、慶応大学、東海大学、法政大学、同志社大学、関西大学等が参加している。放送大学も地上局をもっている。年間3000時間が使われている。ふつう2チャンネルが同時並列で使えるので、いわば宇宙に2つの衛星教室がある形である。1チャンネルあたり、週日に5時間前後使われている勘定になる。昨年から60単位までこの形の遠隔授業で単位をとれることになっているので、単位を出す授業もある。

そのほか、大学病院の間を高精細度画像で結び、医学教育に役立てる、MINCS-UHというシステムも稼働している。北海道情報大学は、通信教育部で、全国に散在する16の分校に通信衛星で講義を送り、同時に地上系のシステムで双方向性を確保し、毎日午後90分3コマの講義をしている。東京工業大学と一橋大学は、ANDESというシステムを使って授業の交換をしている。

1方向ではあるが、放送大学、東亜大学も講義を通信衛星を使って全国放送している。国立教育会館を中央局として、1400の教育センター、社会教育施設、学校に地上局を置く、エル・ネットも、オープン・カレッジとして、50大学の公開講座を放送している。

この2年くらいの間で急速に発展しているのが、インターネットやテレビ会議システムを活用したいわゆるバーチャル・ユニバーシティである。日本でも、海外の大学と連携する事例が目立っている。

三重大学、三重県立看護大学、岩手県立大学、東京大学、ノース・カロライナ大学ウィルミントン校の間で、英語、看護学、情報科学の授業、シンポジウム、公開講座、討論などが行われている。英語の場合は、正規の授業の一部としておこなわれ、三重大学、岩手県立大学、ノース・カロライナ大学からそれぞれ10人程度の学生が参加した。テレビ会議システムを使うが、情報学は、アメリカからのインターネット授業である。。

青山学院大学では、大学院国際政治経済学研究科国際ビジネス専攻で、アメリカのカーネギー・メロン大学経営管理研究科と正規の合同授業を行っている。ファイナンス教育を、テレビ会議方式で実施している。また、総合ビジネスの授業を非同期協調学習で実施している。京都大学総合情報メディアセンターは、ATM専用線を利用して、UCLAと「情報メディア論」を正規の授業として実施している。また、「宇宙物理」、「物理学入門」も正規の授業として実施している。早稲田大学では、海外の大学と、英語、マルチメディア、総合講座等の授業を、CU-SeeMe、TeleMeetなどを活用して、授業交流を行っている。国際情報通信研究科では、ベトナム郵電工科大学に、情報通信技術に関する講義をテレビ会議で送っている。富山大学の人文学部では、「比較社会実習、同演習、教養原論演習」をドイツの3大学との間で実施している。方法は、ウェブ、メーリングリストを中心として、部分的にテレビ会議を用いている。東京都立科学技術大学とスタンフォード大学は、「協調工学特論」を正規の授業として、インターネット、テレビ会議で実施している。講義ではなく、協同プロジェクトである。中央大学、シンガポール国立大学、シンガポールポリテクニク、大阪府立大学、駒沢大学は、「情報処理」、「上級英語」、「マクロ経済学」を正規の授業としてISDNを用い実施している。そのほか、国内の大学にまたがる遠隔教育を実施している事例もある。SCSの他に、早稲田大学と16大学、豊橋技術科学大学と3高専等である。日本大学、慶応大学、高知工科大学等も実践を重ねている。

これらの教育を充実させるためには、ウェブ教材を整備する必要がある。現在教材作成、管理、評価などのシステムの標準化の研究が進んでいる。また、教材、素材のデータベース、パッケージ型の教材の開発がメディア教育開発センターを中心に展開している。

こうして、バーチャル・ユニバーシティが世界規模に広がると、世界各地の学習者が世界のどの地域の大学の提供するコースを、自由にインターネットなどを通して学習できるようになる。

学校教育におけるインターネット活用

学校教育でも、インターネットの普及は急速に伸びており、文部省の計画では、2001年には、すべての学校にインターネットを導入するという方針である。平成11年7月と12月に発表され、今現実に移されているバーチャルエージェンシーの計画では、2005年を目指して、

- すべての教室にコンピュータ
- すべての教室からインターネット
- すべての学校から高速インターネット

を整備するという勢いである。

新しい学習指導要領での学習は、このようなインターネットを活用したものになってくる。それに今、有効に使われ始めたテレビ会議システムも加わり、学校を巡るネットワーク環境は、充実したものになる。学習指導要領では、教科などでのコンピュータや情報ネットワークの活用、総合的な学習の時間での活用が推奨されているが、さらに、中学校の技術・家庭科の技術分野の「B情報とコンピュータ」および高等学校での「情報A、B、C」で情報通信技術が指導される。

学校現場では、これまで、100校プロジェクト、こねっとプラン、現在進行中のEスケア、郵政省の補正予算を受けて展開している、先端的な情報通信技術の活用等国家的项目を中心に、各都道府県市町村がそれぞれ独自にインターネットを導入して、地道な成果を上げてきている。

インターネットには、世界の英知がつながっている。博物館、科学館、大学、研究所、企業、官庁、民間有識者等が、自分の専門に関する貴重で正確な情報を、ウェブページで公開している。その背後にはそれらの情報を作る人が居る。不明な点があれば、時には、eメール等で、直接情報を提供してくれたり、質問に答えてくれたりする。従来なら、自分で出かけ、図書資料、博物館の資料等を調べるだけの時間と労力を必要としていたのが、ネットワークを通して直接海外からでも欲しい情報が即座に手に入る。

ネットワークを通して手に入る情報を、教師は、教材作成の素材として有効に活用できる。Yahoo、Goo、Infoseek等の一般的な検索エンジンをとおして欲しい情報に接近することができるが、欲しい情報に行き着くまでが時には、なかなか大変である。そのような事態に対応して、教材のリンク集もできていて便利である。たとえば、文学、古典、方言、習慣、宇宙、天文、気象、魚、昆虫、酸性雨、植物、水族館、科学館などのURLのリストである。

これらのウェブページの中には、子ども向けの易しいわかりやすい解説を提供しているサイトがある。直接子どもの調べ学習に役に立つ。

行き届いた指導をする教師なら、外部から一旦手に入れた一般向けの情報を、子どもの学習水準にあわせて、内容、表現を変えて、学校のコンピュータに入れておき、授業で子どもに検索させて調べ学習をさせる。準備が大変なので、できるだけ多くの情報の提供者が、一般向け、英文と並んで子ども向けの情報をウェブ等で提供してくれると助けになる。

こねっとGooなどは、子どもの学習向けに作成された検索エンジンである。限られた授業時間の中で、必要な情報を手早く見つけるのに役立つ。動物、植物、昆虫、気象、地震等身近な現象について、いろいろと疑問が沸く。教師の知識だけでは追いつかない場合も多い。そのようなとき、図鑑、資料集等で調べるほか、地域の専門家の応援を受けることがある。動物に詳しい父母、植物に詳しい高齢者、昆虫について博識な人、地域の風俗しきたりに詳しい人、芸術、スポーツに秀でた人、こうした人の助けは大変にありがたい。

このような集団が、ネットワーク上に控えていて、子ども達の質問に応えてくれるとすればすばらしい。全国的な組織になってどの学校からでも対応できるようになれば良い。現在でも、いくつかの研究者仲間やお助けメール等の形で、恵まれた学校が支援を受けることが行われている。

これらは、ネットワークの向こうに居るのが、優れた世界の英知であって、教師や子ども達は、もっぱら知の源泉から学ぶという形である。

しかし、ネットワークの向こうには、学校仲間が沢山いる。これらの仲間が協同、協調、協力した学習する機会は数多い。

身近な地域の特長、社会、しきたり、方言、動物、植物、昆虫、気象、地質、等についてそれぞれが調べた結果をまとめてインターネットやテレビ会議で他の学校と報告し合う。さらに進んで、酸性雨、同じ植物の種の発芽状況、ある日の気象、ある時刻の太陽の位置等を計画的に、各地の学校で一斉に調べて、比較検討する。ネットワークのおかげで、全国的、あるいは、全世界的な観点から、自分の身近な自然現象や社会現象を眺め、その中に自分の身近な現象だけを見ているとは分からない大きな自然の規則性を見いだすことができる。

ひまわりの画像と各学校に設置されたカメラからインターネットに送られる当地の気象状況を全国的に眺めるとき、台風や前線の動きが活きて理解できる。

現在のところ、ネットワークを活用して教育の効果を上げている事例の多くは、社会科や理科の第2分野に属する現象についての学習である。社会の名物、風習、しきたり、方言、植物、動物、昆虫、火山、地震、地形、地質、天候、気象、天体の見え、等は、地域によって大きく違う。その違いがどんな原因によるのかを全国的な見方で総合的に見ると社会や自然界に潜む規則性が生き生きと理解できる。もちろん、一つ一つの社会的風習、動物、植物、地質等の個々の部位などのしくみや名称を学ぶことも大切ではあるが、ネットワークはそれよりはもっと広い見方で社会や自然現象を見ることを教えてくれる。同じ季節なのに北と南では着ているものが違う、北海道が暑いのに、九州は、みぞれが降っているという現実が存在しうることが体験でき、それが気象条件の配置と関連して学習できる。図鑑、資料集や身近な現象の観察記録だけからはとうていとらえられない貴重な経験が得られる。

EarthKAMというNASAの計画では、スペースシャトル・エンデバーのデジカメを遠隔操作して地球の写真を取り、中学生の理科学習に貢献しようとする。日本の中学校も参画して、デジカメの指示を英語で入力し、地球のいろいろな場所の写真をまさに地球規模で手に入れて学習することができる。

ネットワークの長所の一つは、情報を発信するところにある。情報を世界から取ってくるだけがネットワークなのではない。調査結果、実験観察の結果をまとめ、わかり易く表示し、世界に向かって発信する。そのために、慎重に下調べをし、丁寧に厳密に調査、実験をし、現象を記録測定し、きれいに図示し、解説をつける。このような一連の調べ表現活動がきちんとした学習技能を育ててくれる。

総合的な学習の時間での活用

こんどの学習指導要領では、各教科の授業時間が減り、ともなって、学習内容も減っている。そのかわり、総合的な学習の時間が創設された。

総合的な学習のねらいは、

1. 自ら課題を見つけ、自ら学び、自ら考え、主体的に判断し、よりよく問題を解決する資質や能力を育てること
2. 学び方やものの考え方を身につけ、問題の解決や探求活動に主体的、創造的に取り組む態度を育て、自己の生き方を考えることができるようにすることである。具体的な学習活動としては、
 - a. 自然体験やボランティア活動等の社会体験、観察・実験、見学・調査、発表。討論、ものづくり・生産活動等体験的な学習、問題解決的な学習を積極的に取り入れること
 - b. グループ学習や異年齢集団による学習等の多様な学習形態、地域の人々との協力も得つつ、全教師が一体となって指導に当たる等の指導体制、地域の教材や学習環境の積極的な活用等について工夫することが示されている。

ネットワークを上手に活用した事例として、「食べ物が高い」という有名な実践がある。東京の南砂東小学校と石川、鳥取の小学校の間でインターネット、テレビ会議をとおして、米の栽培をした授業である。

東京の5年生の子どもが、市販のおにぎりに沢山の添加物が入っているのに気づき、調べたところ、有機栽培米のお弁当、何も書いてないもの等が見つかった。そこで、食品添加物や農薬について学習して、その危険なことを知り、なぜ危険なものを使うのかと疑問を持ち、自分たちで有機栽培米を作ることになった。石川の小学校にeメールで、苗を送ってもらう。その中にヒルが紛れ込んでいるのにびっくり。本格的に苗を送ってもらうときにゲンゴロウやヒルも注文する。石川の方は、なぜヒル等が欲しいのが不思議に思う。こうして子ども達は地域の差に気づいていく。東京、石川それに鳥取の小学校が加わり3校の交流学習が始まった。各校が稲の成長の様子をホームページで紹介した。ある時、鳥取の小学校のホームページに足のないカエルの写真が出た。調べると農薬のせいらしいことがわかり、東京の子ども達は農薬反対のテレビ会議をもちかけた。当然同意してくれると思ったら、鳥取の子どもは、農薬を使わないと見た目の良い米ができず、都会の人に買ってもらえないと納得してもらえなかった。そこで消費者にアンケートを出したところ、見た目がよく安全で安い米を望んでいることが分かった。

農薬を使った場合と使わなかった場合の良いところだけを要求している消費者のわがままに気づく。石川、鳥取の子どもも、農薬の危険性に気づき調査をする。すると都会と農村で、農薬に対する受け止め方が大きく違うことを見つける。こうして立場による違いやそれを総合的に判断する必要性を学んでいく。中干しの水抜きの時には、東京の人工水田はコンクリートの上にビニールで作っているので、虫が死んでしまう。農村では、水路があり虫や魚は逃げていく。そこでまた環境について学ぶ。都会の水田は子ども達がいつも世話をし、雀よけも張り、まさに過保護水田であった。石川の方は、減農薬、鳥取の方は、ウンカの発生のため農薬を使った。収穫した米を農協で評価してもらったところ、鳥取の米が一番高く、石川が次ぎ、東京の有機栽培米は最低であった。基準には、農薬を使ったかどうかは入っていない。そこでホームページで無農薬栽培の農家を探し、どうしているかを尋ね、生産者の値段を理解して買ってくれる消費者が居る、生産者と消費者の信頼関係が大事ということが分かる。このような学習をとおして、どの立場から、農薬を減らしていきたいということを考え、それがなぜ実現しないかを追求していく。そしてその疑問を環境庁の方に聞いてもらう。

このような主体的で活きた学習は、ネットワークがなければとうていなり立たない。

今、大切なこと子どもたちは、インターネットから学んでいる。

インターネットの役割は、

- 世界の英知を集める
- 地域文化を見つめ直す・
- 広域交流で学校を開く
- 異文化交流・異文化尊重
- 世界に発信できる内容をつくる

などにある。

しかし、インターネットの弊害もある。

有害情報に満ちているからである。

従って教育には、有害情報を防ぐ工夫がいる。ファイヤーウォールを張る、情報にレイティングをつけ、受ける際にフィルターをかける等である。これでも情報は漏れるし、必要な情報が届かなくなるので、むしろ、有益な情報を選んで充実させ、それを子どもに与える工夫が有効である。与えたい情報のリンク集の整備である。

情報発信についても、プライバシーを守る、誤情報を出さない、中傷、悪口、いたずらなどの有害情報を出さない、知的所有権を重視する、ネット独占をしない等の情報倫理を子ども達に身につけさせることが大切である。

目指す英語力と学習方法

(i) から (iv) までの目的は聞き取る能力と話す能力が中心になり、読む能力、書く能力は二次的なものとなる。しかし (v) は読む能力が中心であり、これによりそれぞれの学習方法は明らかに異なる。少なくとも中心になる学習活動が異なってくる。さらに言えば、使用すべき辞書さえも異なると言ってもよい。基本的な文法知識があるという前提だが、話す、書くといった productive な活動を助けるような辞書には collocation に関する情報が不可欠である。動詞、名詞、形容詞、副詞といった語群のひとつひとつの語がそれぞれどんな語と結びつき、どう展開できるかが示されている辞書が必要だ。「ジーニアス」「ライトハウス」「プロシード」その他の英和辞典やオックスフォード、コリンズ、ロングマンといったイギリスの出版社の学習者用辞典がこれにあたる。一方、「読んで楽しむ」ためだけならばそういった情報はあまり要らない。むしろ収録語数が多いことが必要である。英米を中心とした英語圏の小説、詩、劇、雑誌を読む際知らない語を引いて載っていないということがまずないというくらいの語数が欲しい。「ランダムハウス英和」や研究社の「大英和」では大きすぎるという場合には「リーダーズ」であろう。

学習方法と提案

いくつかの提案をしたい。(a) まず、自分の住む地域の国際交流活動に参加してみる。地域センター、国際交流センター、善意通訳協会といった団体に問い合わせるとよい。Think Globally, Act Locally の標語の意味と英語を学ぶ意味が体得できる。これを通じて日本文花を紹介する。(b) パッケージの団体旅行ではなく個人で海外旅行をしてみる。自分で主体的に外国人とコミュニケーションをする難しさ、楽しさを体験し、英語学習に新たな動機が加わる。同時に、メニュー、T- シャツ、看板、注意書き、広告といった「街の英語」に関心を持ち、メモやノートをつくり写真に撮る。このようにして外国語学習に必要な観察力を養い、英語のおもしろさを知る。(c) 日常的にはNHKの英語番組を聞く／見る習慣をつける。(d) 語彙を増やすために家の中にある物を表す英語を書いた Post-it をすべての物にはり時々言って覚える。(e) 家にある外国製品のラベルや使用法などの英語を読む。

Action Research: Four Skills Integrated Teaching for High School Students in Osaka

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Abstract

Oral Communication Special Interest Group (OCSIG) is a group of senior high school English teachers in Osaka. OCSIG did Action Research involving a class of eleventh graders, a practitioner (this writer) and ten observers (senior high school English teachers in Osaka). Forty senior high school students were instructed using a textbook Talk about Osaka edited by OCSIG. The group set up a hypothesis; four-skills integrated activities in this textbook will motivate learners, resulting in improving the learners' all-round English abilities. Parts of the interactions in class were videotaped and the group analyzed them. For the analysis, the group developed a checklist and collected scores according to it. Questionnaires to grasp the preferences and confidence of students to discuss particular topics about Osaka were administered. Pre and post-proficiency tests were used to evaluate students' improvements in proficiency.

Introduction

This paper is to report Action Research conducted by Oral Communication Special Interest Group (OCSIG) in 1999 and 2000. Some English teachers seek practical hints without any kind of theoretical framework, believing that theory is useless in the classrooms. The group acknowledged the significance of Action Research for the purpose of bridging the gap between theory and practice.

Oral Communication Special Interest Group (OCSIG)

Oral Communication Special Interest Group (OCSIG) is a group of senior high school English teachers in different schools in Osaka. Since the courses of studies by the Ministry of Education, Science and Culture implemented Oral Communication in 1994, the group has been working to contribute to English education. In 1998 OCSIG compiled a textbook that was used for this Action Research.

Textbook: Talk about Osaka

The textbook which OCSIG compiled aims at enhancing students' confidence in communicative use of English. OCSIG members tried to include the successful lesson plans in actual class situations in the textbook. It consists of six main lessons and deals with familiar topics in Osaka as in Table 1. Each lesson contains four-skills integrated activities as follows: (a) vocabulary, (b) listening, (c) model dialogues, (d) pair work, (e) short passage reading, and (f) guided writing. Some lessons have information gap type exercises, interview and survey type exercises and free compositions based on brainstorming.

Table 1. Contents

Lesson	Pages	Features
1. Have a good time in Osaka	4	Pair Practice, Guided Writing
2. Shopping in Osaka	4	Pair Practice, Guided Writing
3. Festivals in Osaka	4	Interview, Guided Writing
4. Language in Osaka	6	Information Gap, English Rakugo, Guided Writing
5. Living in Osaka	7	Osaka Trivia Questions, Survey, Free Composition
6. Future of Osaka	4	Ranking, Free Composition

A Rationale for Action Research

Carr and Kemmis offer the following definition of Action Research:

a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which these are carried out (1985, pp. 220-1).

OCSIG basically accepted this definition while putting it in educational settings.

The group also supported Nunan's (1989, p. 102) five core principles as a rationale for Action Research.

1. School-based: Strong bonds should be forged between the research and practice.
2. Experiential: Theory and principles should be tested out in practice.
3. Problem-centered: Problems exist in real classrooms. Teaching and research should be conducted towards the identification and solution of such problems.
4. Developmental: Teaching is a complex human undertaking. Teachers are at different stages of development.
5. Open-ended: Professional development is unending, continual and lifelong.

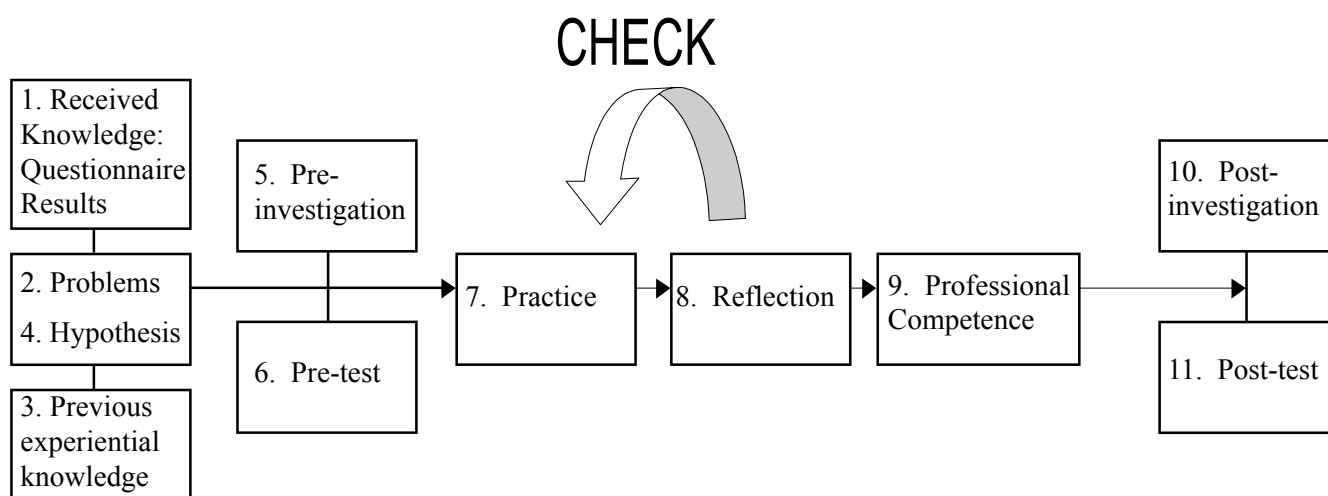


Figure 1. Action research cycle adapted from Wallace (1991)

Action Research Cycle

Action Research involves small-scale investigative projects and consists of a number of phases which recur in cycles. The group set up the following eleven phases for Action Research in Figure 1, adapting Wallace's (1991) idea.

1. Received Knowledge: To help identify the problem, already received knowledge should be utilized. OCSIG had already administered questionnaires to English teachers in Osaka twice.
2. Problems: OCSIG members discussed the questionnaire results to identify problems as well as they brought the problems from their own classrooms.
3. Previous Experiential Knowledge: To set up a hypothesis, previous experiential knowledge was utilized. OCSIG members had more than fifteen years of teaching experience.
4. Hypothesis: OCSIG set up a hypothesis to solve the problems.
5. Pre-investigation: Data were collected by administering a questionnaire.
6. Pre-test: Data were collected by administering a pre-test to assess students' proficiency level.
7. Practice: Lesson plans were made and put into practice.
8. Reflection: The effects of action were assessed by using a checklist. Points for improvement were discussed for the next action.
9. Professional Competence: Reflection phase contributed to raising the participating teachers' (the observers as well as the practitioner) professional competence.
10. Post-investigation: The hypothesis was tested by administering a questionnaire.
11. Post-test: The hypothesis was tested by administering a post-test to assess students' improvement of proficiency level.

Problem Identification (1. Received Knowledge and 2. Problems Phase)

OCSIG administered two questionnaires in 1994 and in 1996 to the teachers in Osaka. The purpose of the questionnaires was to investigate how Oral Communication classes were conducted and to help discuss what problems teachers were facing. The group examined the questionnaire results and the problems from their own classrooms were considered. The following problems were pointed out to initiate Action Research.

1. Different System: Japanese language is distant from English in terms of phonology, syntax and culture. This creates difficulties in implementing oral practice in class and getting active participation from students.
2. Lack of Motivation: Students in general know they can live comfortably without learning English. Teachers acknowledge that students think they have no need to study English.
3. Declining Learning Abilities: In most educational occasions students tend to easily lose concentration. The same instructions and explanations sometimes must be repeated over and over so that the teachers can ensure students understanding. Even teachers with much experience share the same problem and it seems undeniable that students' over-all abilities in academic fields are in decline.
4. Gaps of Abilities in One Class: In a worst case scenario there would be a few students who don't know the alphabet and a few students who want to take proficiency test outside school in the same class.

5. Difficulty in Improving Proficiency: Some students study only for the test. After the test is over they apparently forget almost everything that was taught. It seems quite difficult to raise the level of students' English proficiency in the long run.

Hypothesis (3. Previous Experiential Knowledge and 4. Hypothesis phases)

How these problems could be solved was discussed. After the discussion OCSIG set up the following hypothesis.

Four-skills integrated activities with familiar topics to discuss in this textbook will motivate learners, resulting in improving the learners' all-round English abilities.

Plan (7. Practice)

The practitioner taught 40 students using the textbook from November 1999 to January 2000 with an interval of winter vacation for two weeks. In total 14 consecutive class hours, each of which consisting of 50 minutes, were conducted and some scenes were videotaped. To cover one lesson, average two class hours were spent. Classroom English was used as often as possible by the practitioner. There were some occasions when students had difficulty in comprehending what they were supposed to do. In those cases, Japanese was used. When students needed to ask questions as for the meaning of (a) word(s), example sentences were given by the practitioner. In addition to the practitioner's English, students had chances to listen to the native speakers' recording accompanied with the textbook. A couple of supplementary worksheets were prepared for each lesson so that activities could be performed easily.

Checklist Analysis Watching the Video (8. Reflection Phase)

OCSIG members watched the video to analyze the instruction. For the analysis of the instruction, a checklist with the following categories in Tables 2-5 was prepared. Each instruction was evaluated by eleven observers including the practitioner on a 1 (poor) to 5 (excellent) scale utilizing this checklist.

Warm-up and Readiness At the beginning of each lesson, the practitioner always prepared a warm-up activity. Jazz chants like rhythm practice, flash-cards, two types of listening activities; 1) cloze-type listening reviewing the dialogue and 2) listening that utilizes students' writing were used for warm-up activities. 4.02 points were marked in Table 2 - 1.

Grasping Students' Comprehension As you can see in Table 2 - 2, in this category, how much the practitioner grasped the students' understanding was assessed. The evaluation was based on subjective judgments by the observers.

Table 2. Warm-up and Students' Comprehension

1	Warm-up	4.02
2	Grasping students' comprehension	3.99

Input Related Techniques during the Instruction In the categories in Table 3, how effectively the input related techniques were utilized during the instruction was evaluated.

3. Visual Aids: The textbook included colorful pictures and illustrations. As a matter of course clear images were successfully presented to students without elaborating extra visual aids.
4. Topics: Main themes were all familiar to students.

5. Vocabulary: Vocabulary was effectively presented through warm-up activities and matching activities. To review the previous lessons, mini vocabulary quizzes were occasionally used.
6. Information: Instead of word-by-word translation, transferring information was emphasized. For this purpose, the semantic aspects of individual lexical items were more significantly treated than syntax. Enough time was secured for vocabulary learning at the beginning of each lesson, so there were no major pitfalls in this category.
7. Explanation: In explaining the meaning of lexis students did not know, example sentences were used by the practitioner. Most of the time students enjoyed guessing the meaning from the example sentences or contexts given. Only when they had difficulty in reaching the correct meaning, their first language, Japanese, was utilized.
8. Instruction: Generally every lesson was consistent in organization. In the first lesson, the practitioner had to exactly tell students what to do and often repeated the same instruction. Even after elaborating the way of instruction, major points had to be summarized in Japanese. However, as they continued to study the following lessons, there was no need to add instructions in Japanese except for moving into completely new activities.

Table 3. Input Related Techniques

3	Use of visual aids	3.90
4	Topic presentations	4.40
5	Vocabulary	4.47
6	Information presentation	4.42
7	Clarity of information	4.38
8	Clarity of instruction	3.97

Four Skills As you can see in Table 4, to what extent four skills were practiced in each class was evaluated. In comparison to the ordinary English teaching in Japan, more listening and writing activities were conducted.

Table 4. Four Skills

9	Listening	4.47
10	Reading	3.18
11	Speaking	3.18
12	Writing	4.07

Activities The purpose of the activity was checked and the results were shown in Table 5. In the categories of variety and accuracy, the instructions were highly evaluated. However in the categories of creativity and fluency, it was less highly evaluated.

Table 5. Activity Purposes

13	Variety	4.18
14	Fluency	2.36
15	Accuracy	3.56
16	Creativity	2.78

Preferences and Confidence Questionnaire (5. Pre-Investigation and 10. Post-investigation Phase)

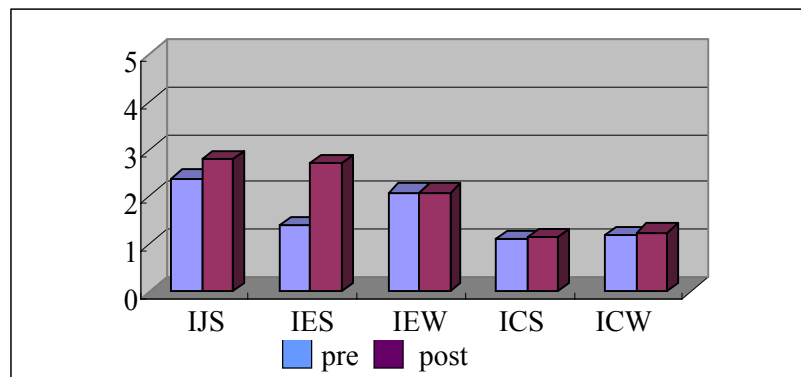
Questionnaires to grasp the preferences and confidence level of students to discuss the following particular topics about Osaka were administered two times, before and after the instructions.

Ten topics:

(1) fun spots, (2) festivals, (3) dialect, (4) art (Rakugo, Manzai), (5) sports, (6) food, (7) personality of the locals, (8) figures in history, (9) future, (10) problems in Osaka.

The results of the pre and post-investigations were compared in Figures 2 and 3. The student answered on a 1 (strong no) to 5 (strong yes) scale. 1JS means that on the topic 1) fun spots in Osaka, the student wants to speak in Japanese. 1CS means that the student is confident in speaking in English. 1CW means that the student is confident in writing in English. For the lack of space, the results of one concrete topic, fun spots in Osaka, and an abstract one, problems in Osaka, are shown in Figure 2 and 3.

Concrete Topic



On the topic of “Fun Spots in Osaka”

1JS: willing to speak in Japanese

1ES: willing to speak in English

1EW: willing to write in English

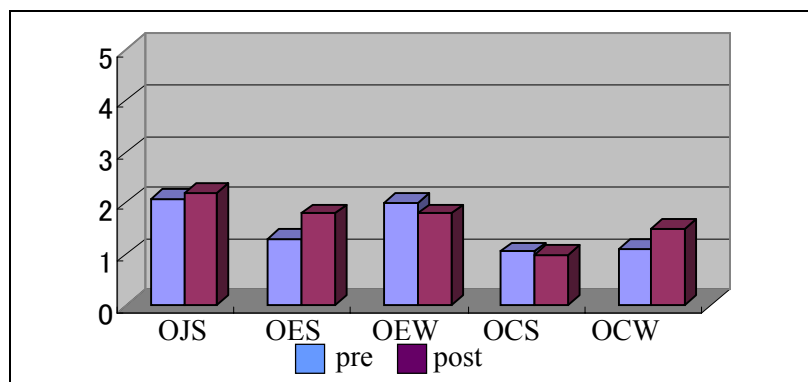
1CD: confident in speaking in English

1CW: confident in writing in English

Figure 2. Preferences and confidence / Fun spots

In the pre-investigation, this particular group of students preferred writing better than speaking in English. They felt safer in writing because time is secured in writing. In comparison to the score of 1JS(speak in Japanese about fun spots in Osaka), there is a remarkable decrease in 1ES(speak in English about fun spots in Osaka).

In the post investigation, a remarkable increase was seen in 1ES(speak in English about fun spots in Osaka). In this category the score went up from 1.7 to 2.8. This means that more students became positive in speaking in English after the instruction.



On the topic of “Problems in Osaka”

OJS: willing to speak in Japanese

OES: willing to speak in English

OEW: willing to write in English

OCD: confident in speaking in English

OCW: confident in writing in English

Figure 3. Preferences and confidence / Problems

In Figure 3, the questionnaire results concerning one of the abstract topics, problems in Osaka, is displayed. In the pre-investigation, in all the categories except for OJS, the score was less than 2 points (no). In each category, the score was much lower than that of a concrete topic.

In the post-investigation, a small increase in OJS (speak in Japanese about problems in Osaka: from 2.4 to 2.6) and OES (Speak in English about problems of Osaka: from 1.6 to 1.9) was seen. On the other hand, there were a small decrease in EW, CS and CW. Actually, they produced a larger number of sentences in the latter chapters, but the impression that they had to write on abstract matters seemed to influence the questionnaire results negatively. The findings in Figure 3 show it is more difficult to deal with abstract matters.

Pre and Post proficiency Test (6. Pre-Test and 11. Post-Test Phase)

To evaluate students' improvement in proficiency, pre and post-tests were constructed based on the third Grade Step test administered by the Society for Testing English Proficiency, Inc. Each test was adapted so that students could take the test in fifty minutes. Pre-test was administered before the first instruction in September and post-test after the last instruction in January. They consisted of the five test item categories in Table 5 and the difficulty level of each test was roughly maintained at the same level according to the data of the previous test takers.

In order to compare the results of pre and post tests, a t-test analysis was used. The results were in Table 5. The t-test results indicated the significance of differences in the categories of conversations ($p < .005$), ordering ($p < .10$), comprehension ($p < .10$) and total scores ($p < .025$).

Table 6. Pre-Post Proficiency Tests

Test Item Categories		Number of Questions	Pre		Post		<i>t</i>	<i>p</i>
			Mean	SD	Mean	SD		
1	Idioms	13	7.8	2.1	8.0	2.1	0.40	NS
2	Filling in the missing parts in conversations	7	4.2	1.5	5.3	1.2	3.55	.005
3	Putting words in the correct order to make a sentence	3	1.9	0.7	2.1	0.6	1.41	.10
4	Comprehension of a passage	5	3.2	1.5	3.6	1.1	1.55	.10
5	Listening	12	6.3	2.2	6.1	1.7	0.78	NS
Total 40		23.4	5.0	25.1	4.8	2.17	.025	

n = 35

Discussion (9. Professional Competence)

The Reflection phase contributed to improving professional competence of all the teachers who participated in this Action Research. The practitioner himself realized points for improvement by watching the video. Unless he had watched the video, he would have not noticed these points. Three main self-reflection points by the practitioner are as follows.

1. On some occasions the practitioner missed the chance to control the class. He should have given a concrete command to discipline the class.
2. Information which should be written on the chalkboard should be reexamined. Sometimes too much information was presented at one time.
3. When using classroom English, the practitioner sometimes spoke too fast.

The practitioner also raised his competence as a teacher because observer teachers pointed out merits and defects of the instructions, which he would have not realized. From the observers many comments were presented, which can be summarized as follows.

1. At first, students were less motivated because they thought English is a completely different language from Japanese. In the course of the lessons, the class atmosphere gradually turned into a lively one.
2. In comparison to the traditional grammar translation type instruction, there was more active participation of the students and higher levels of concentration and involvement were attained.
3. As for declining learning abilities, there were some occasions when some students were not able to follow the instruction for pair work. There is a need to improve how to demonstrate before pair work.
4. If more time had been allotted, writing in small groups could have been incorporated. More effective use of group work may provide an answer to the gaps of abilities and class size problems.
5. The fact that t-test indicated the significance of differences in the categories of conversations, ordering, comprehension and total scores partially supports the hypothesis.

Conclusion

This Action Research was the first collaborative teacher-researcher type attempt by OCSIG. The group tried to maintain flexibility of the research so that it would not give the class and practitioner too many burdens. Though a clear-cut proof of the hypothesis has not been attained, all the participants learned a lot from the reflection phase. The writer especially benefited by getting constructive criticisms from the observers. Finally the group would like to suggest that more teachers should have a teacher-researcher mind in order to bridge the gap between theory and practice. Action Research surely can help teachers grow.

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Assessing a Computer-Assisted Training Program for the Acquisition of Japanese Pitch: Cooperation among Foreign Language Instructors, Linguists, Lab Directors/Managers and Technology Specialists

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Abstract

We report on several projects and novel methodologies that assess the efficacy of a computer-assisted training program for the acquisition of Japanese pitch. One question was whether a self-study program using visual feedback of fundamental frequency contours and additional written materials (prosody graphs) was possible without an instructor interpreting the acoustics. Experiments were designed to obtain objective and interpretable results, and to test the incorporation of the program into a regular Japanese language curriculum. The results indicate that the program is effective for the acquisition of Japanese pitch, and that sentence-level training is possible with the prosody graphs. The program affects both learners' speaking and listening abilities. The experiments also demonstrate that this training can effectively supplement a regular Japanese curriculum. These projects have brought together a director and a manager of a language laboratory, foreign language instructors, phoneticians/linguists, and technology specialists: cooperation among them has proven valuable.

Introduction

Technology has brought us many opportunities to create materials for foreign language learning, but we cannot always tell if the materials are useful, and what exactly they contribute to language acquisition, if anything. Among the many products advertised and sold as language-learning aids, which are just fancy toys for momentarily attracting students' attention? Which are good for enrichment, and which can be incorporated into the regular language curriculum?

One problem with currently available CALL programs is that we still lack methods for identifying the specific influences of the products, and for finding objective ways of measuring learners' changing abilities while using a product. These problems are complicated by Human Subjects issues encountered when conducting objective experiments in educational settings. For example, in order to obtain statistically meaningful results, researchers usually have to obtain a large amount of data by putting subjects into lengthy and exhausting experimental sessions. For the language instructors, who are practical and concerned with their students' educational needs, this is not acceptable.

At the Language Laboratories and Archives of the University of Chicago, we have made efforts to solve these problems by conducting experiments with novel methodologies that assess the efficacy of computer-assisted training for the acquisition of Japanese pitch and duration (Hirata 1999a, 1999b; Lory & Hirata 1997; Landahl &

Ziolkowski 1995, Ziolkowski & Landahl 1995; Landahl, Ziolkowski, Usami, & Tunnock 1992; Ziolkowski, Usami, Landahl, & Tunnock 1992; Tunnock 1991). In this paper, we report on one of those projects, which utilized Kay Elemetrics' Visi-Pitch™ and later its CSL-Pitch Program. These programs enable us to see real-time representations of spoken utterances on a computer screen, and to compare a learner's speech with that of a model. They immediately exhibit the utterances' fundamental frequency contours, which correspond to our perception of pitch. However, what is seen on the screen is pure acoustics, not easily interpretable by non-phoneticians. For example, as shown in the upper graphics in Figure 1 (on the next page), the word boundaries do not correspond to breaks in the fundamental frequency lines. The length of the line represents the duration of voiced speech, but it is sometimes not clear if the line represents a short vowel or a long vowel. It is also not clear to the learner how steep a rise or a fall is significant or ignorable.

To address the interpretation problem, we created prosody graphs as supplementary materials throughout training. They were originally developed by Matsuzaki, Kushida, Tsukiji, & Kawano (1997). A prosody graph is a schematic description of how we perceive fundamental frequency contours and corresponds to our knowledge of pitch height, words, and morae or rhythmic beats. The lower portion of Figure 1 shows examples of prosody graphs. Circles represent each mora (or beat), and ovals represent bimoraic syllables such as long vowels. The length of the vertical lines indicates perceived relative pitch height, and the horizontal lines at the bottom correspond to words or phrases.

Our first questions were: Is a self-study program using visual feedback of fundamental frequency contours and prosody graphs possible without an instructor interpreting the acoustics? Does this program enhance the learners' pronunciation and intelligibility? Second, given the difficulty in interpreting pure acoustics, would it ever be possible for a learner on his/her own to practice with fluent sentences, as well as with isolated words? Third, is training with the visual feedback program useful for the learners' listening comprehension as well as speaking abilities?

We addressed these questions using the facilities of the Language Laboratories and Archives at the University of Chicago, where the director and the manager make special efforts to bring together various professionals and students who work on language. As a result, the space and facilities in the Labs are shared by traditional users such as language instructors and their students, as well as by faculty and students in linguistics research supported by technology specialists. This allowed us to create the project which we present in this paper.

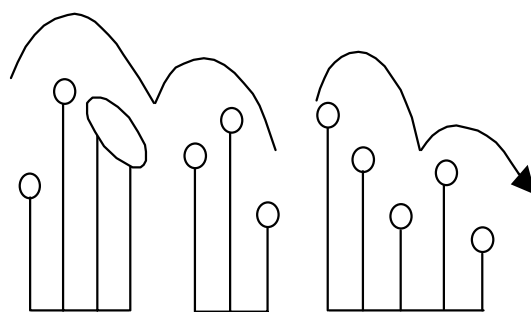
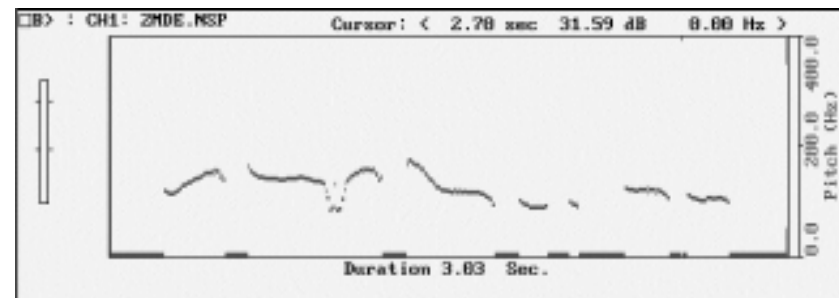
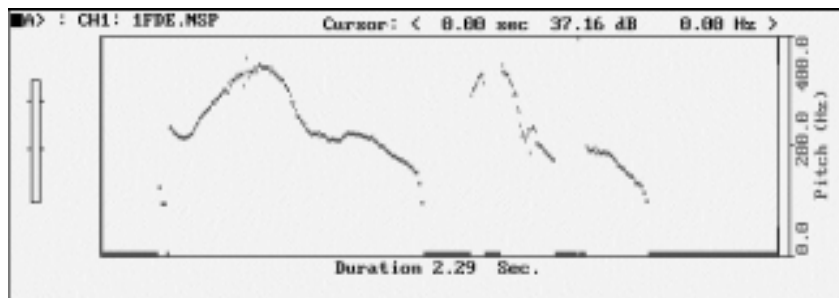
Method

Subjects

Subjects were eight native speakers of English who were taking the intermediate Japanese course at the University of Chicago. Traditionally, the experimental design for finding effects of training is as follows: the training group participates in a pre-test, training, and a post-test, and the researchers compare the results of these two tests with those of a control group that does not participate in the training. This design, however, is problematic in a real educational setting, since language instructors do not want to give their students unequal opportunities. In addition, if we asked for volunteers for each group, we might end up creating two groups that differ in their motivation, which defeats the purpose of an objective experiment. Therefore, we added a training session for the control group after the two experimental tests had taken place. In this way, we gave both groups an equal opportunity to experience visual feedback, and the grouping procedure, therefore, could be completely random.

Training Procedure

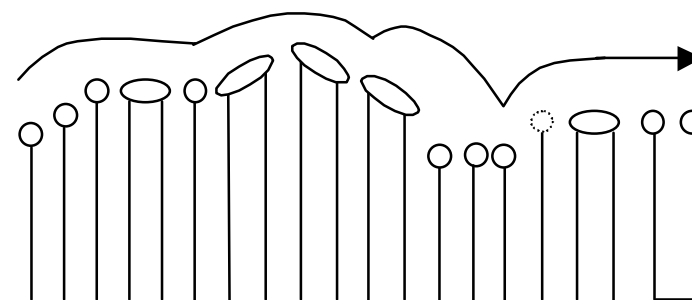
Training materials included pairs and triplets of words contrasting in pitch or duration, or in both, e.g., *ame* vs. *ame*, *tori* vs. *toori*, and *i-sho* vs. *i-Q-sho*^l vs. *i-Q-sho-o*. Out of 10 training sessions, only the first three sessions



ka wa i i i nu o so to de ka u

‘To have a cute dog outside’

kawai ‘cute’
káu ‘to have pets’



ka wa i sa n wa o o ki i no o to o ta ku sa n ka u

‘Mr(s) Kawai buys many big notebooks’

kawai (surname)
kau ‘to buy’

Figure 1. Examples of fundamental frequency contours in Visi-Pitch™ and prosody graphs

dealt with words in isolation; the rest consisted of phrases or sentences. These utterances were recorded by four native speakers of Japanese, 2 males and 2 females. This added difficulty for the learners in interpreting the fundamental frequency contours, but we believe that exposure to various voices is a necessary part of language learning. To compensate for this difficulty, we created supplementary handouts.

¹ Q here represents a geminate consonant.

A handout was made for each of the ten sessions, explaining how to pronounce the utterances with proper pitch control using prosody graphs. Each session has a particular goal for subjects to focus on. Session 1 states criteria for judging the goodness of the subjects' productions. Variations resulting naturally from different speakers, speech rates and sentence lengths are systematically introduced and explained. These codings reflect cooperation between Japanese language instructors and linguists.

The training procedure was as follows: The subjects came individually to the Language Labs to practice with Visi-Pitch™. In each of ten training sessions, subjects did the following:

1. Read the handout,
2. Opened each model audio file, e.g., *kīru* and *kiru*,
3. Listened to the model tokens and watched their pitch patterns in real-time,
4. Produced the words on another empty window,
5. Overlaid the model pitch contour onto their own pitch contour, and
6. Repeated the procedure, producing the same words until their pitch contours matched those of the models.

Each session took about 30 minutes. The training sessions were completed in three and a half weeks.

Test Procedures

In order to assess the subjects' changing abilities, we conducted production and perception tests before and after the training. For production tests, 21 words were written on index cards using Japanese orthography, and the cards were randomized. A sentence frame was also written on a card. Subjects first repeated each word in the stack after hearing it spoken by the examiner. Then, we recorded their production of the 21 words three times in isolation, and three times in the sentence frame. In each repetition, the words were presented in a different random order.

For perceptual tests, there were 60 words and 60 sentences in each. None of the utterances were ones that subjects had practiced in training. The materials recorded by two female native speakers of Japanese were digitized at 48 kHz on an SGI computer. The procedure for the perceptual test was for subjects to choose one of nine pitch patterns for the word they heard on the computer. Subjects first clicked the play button on the computer screen to listen to the word, and then clicked one of the pitch patterns displayed on the screen. For the sentence tests, a frame sentence was written on the computer screen, e.g., *Sokowa ____ to yonde kudasai*. When subjects clicked the play button, they heard a sentence that included the target word in the underlined location, e.g., *Sokowa chizu to yonde kudasai*. Then the subjects chose the pitch pattern that matched the target *chizu*. The program in Tcl/Tk used in Hirata (1999a and 1999b) was modified to execute this procedure. This program represents the input of the technology specialists and programmers.

Results

Production tests

For the production tests, two native speakers identified all the utterances produced by subjects. For example, one of the word sets included the following four words: *tóku*, *toku*, *toQku*, and *tooku* ('to solve,' 'advantage,' 'a long time before', and 'far away'), which were randomly presented and recorded. The native speakers were asked which of the four words they thought the subjects intended to say. The number of the evaluators' identifications which matched the subjects' intent was then calculated. Figure 2 shows the percentage of correct scores for the training vs. the control groups averaged over the two evaluators. A difference between the training and the control groups was found in the sentence tests; the amount of improvement from the pre-test to the post-test was 21% for the training group, and 4.6% for the control group. That is, the intelligibility of the training group increased from the pre-test to the post-test, more than that of the control group. For the word test, improvement made by the training group was greater than that of the control group as well, but the difference between the two groups was less (11.9% vs. 5.8%).

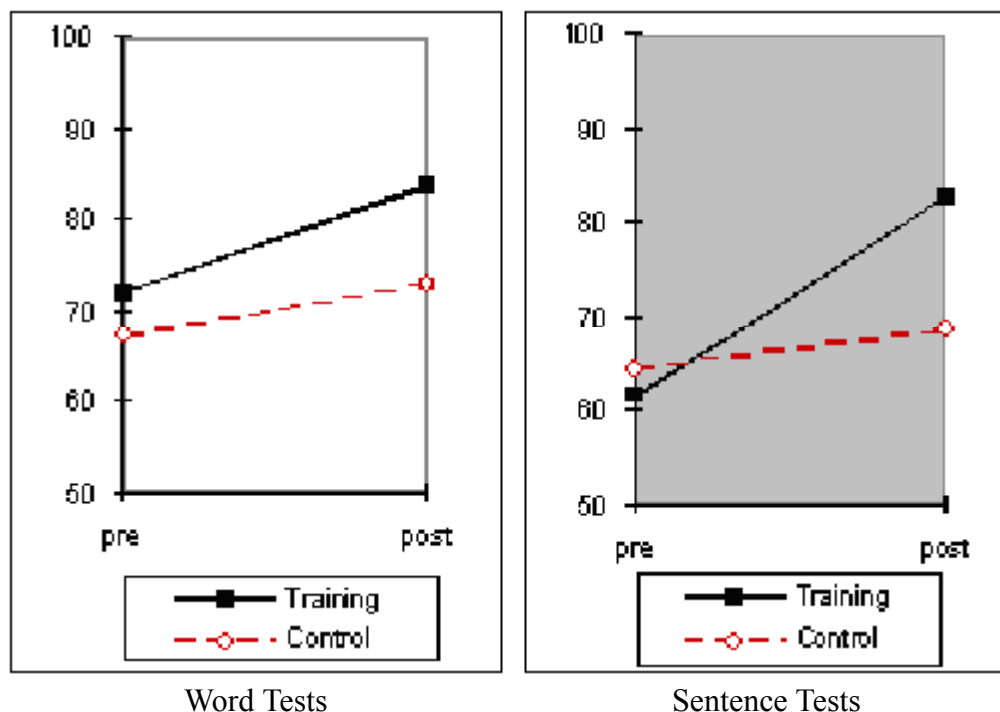


Figure 2. Production test results

Perception tests

We found similar results for the perception tests. Figure 3 shows the subjects' overall correct responses for the pre-test and the post-test.

For the word tests, there was no difference in the amount of improvement between the training and the control groups. However, for the sentence tests, there was a clear difference between the two groups. This means that the Visi-PitchÔ production training had an effect on the subjects' perceptual ability, particularly at the sentence level.

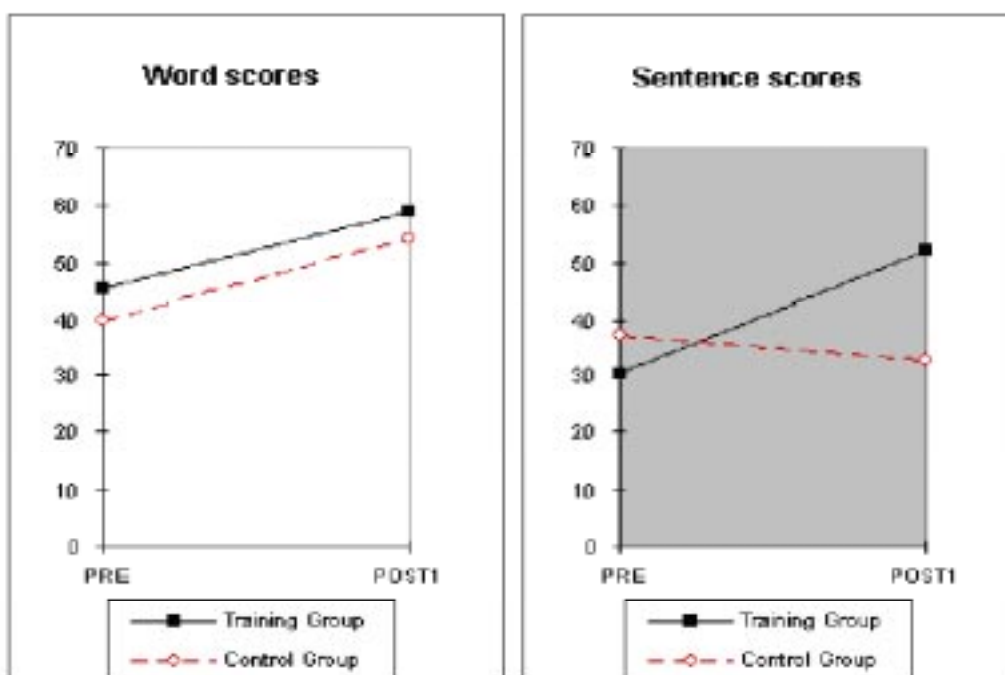


Figure 3. Perception test results

Perception vs. production tests

Next, we wanted to know how much each individual subject developed his/her perception and production abilities after training. In Figure 4, the horizontal axis indicates the production test scores, and the vertical axis indicates the perceptual test scores.

Each arrow represents each individual subject. The starting point of the arrow represents the subject's pre-test scores of production and perception, and the end point represents his/her post-test scores. The broken lines are for control subjects, and solid lines are for training subjects.

The length of the arrows, which indicates the amount of overall improvement for perception and production, is longer for the training subjects than for the control subjects. For example, Training Subject A and Control Subject G are located at a very similar point at the pre-test. However, a difference appeared in the post-test, in which subject A improved about 35% in the perception tests, while subject G showed a decrease in his perceptual test scores.

Among the training subjects, variation was found with respect to the degree of perception and production development. Two distinct patterns of development were found. Subjects B and D, as indicated by these horizontal dark arrows, improved mostly on production, whereas subjects A and C, as shown in the more vertical white arrows, improved more robustly on perception.

These are the results of the sentence tests, but for the word tests, there was no clear distinction between the two groups in terms of the overall length of the arrows.

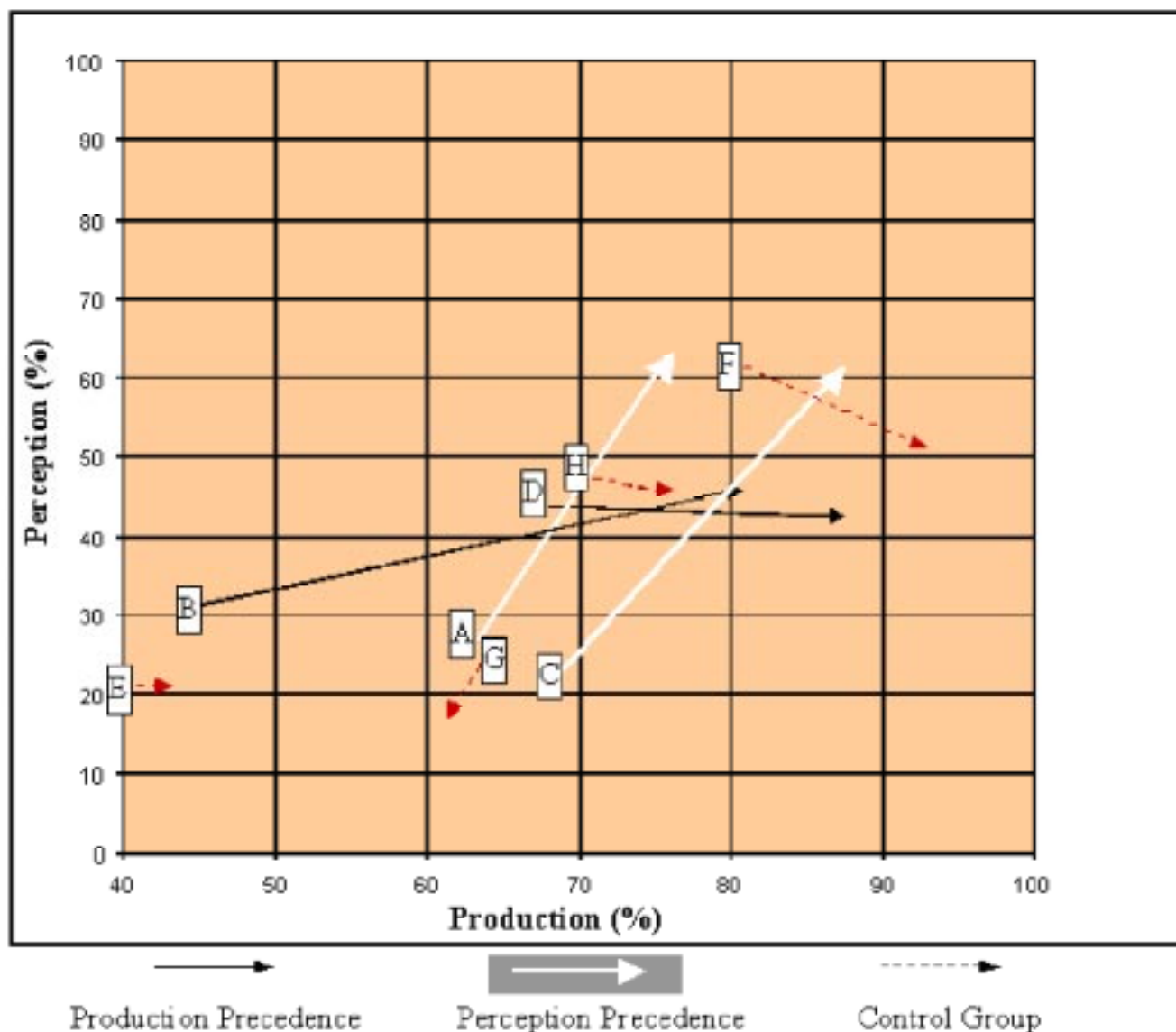


Figure 4. Results of perception and production improvement by individual subjects

Conclusion

In summary, the results indicate that (1) the training program with visual feedback is effective for the acquisition of Japanese pitch and duration, and that sentence-level training is possible with additional written materials. Second, (2) this production training can affect both the learners' production and perceptual abilities. Furthermore, all the students successfully participated in the experiments while attending regular classes. This demonstrates that (3) the training program is an effective supplement to a regular Japanese curriculum.

Finally, the methodology used in this project suggests a new way of conducting systematic but non-disruptive experiments in educational settings. Furthermore, the project has brought together professionals in various fields: a director and a manager of a language laboratory; foreign language instructors; phoneticians/linguists; and technology specialists. We have found that cooperation among these groups is extremely valuable. We believe that these professionals must continue working together to bridge the humanity/technology gap in foreign language teaching and learning.

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A Bilingual Voice-Synthesis Multimedia Mirror-Dictionary for International EFL/JFL Education

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Abstract

The development of a bilingual multimedia dictionary (BMD) for EFL and JFL learners is intended to provide effective, computer-aided (CAI) multimedia instructional tools largely unavailable in conventional electronic translation dictionaries and CAI programs. BMD can show video clips of a native speaker demonstrating English pronunciation, convert Japanese Kanji sentences into Hiragana, and can “speak” all sample sentences in the database in both Japanese and English, utilizing text-to-speech voice-synthesis technology. Lexical word associations related to word look-ups can be accessed. The goals embodied in developing the BMD are to accelerate and enhance language learning for beginning students of Japanese or English, and to provide a dual-language interface which can be easily accessed in a multiplicity of educational environments. By providing an interface that can be used by both English and Japanese language learners, and through planned implementation via inter/intranet, the dictionary can be utilized as a tool for international communication.

Introduction

There are various types of electronic dictionaries and software on the market, but not many are compiled for beginners. A beginning-level CAI dictionary can incorporate features important to both EFL and JFL learners. First, many EFL beginners have a strong desire to acquire accurate English pronunciation, but it is difficult for these students to pronounce English words correctly (even with aural cues), without demonstrable knowledge of the mechanisms of pronunciation, such as tongue position, lip movements, etc., so, to benefit learners, video clips of a native speaker pronouncing terms can be included in the dictionary software. Second, for JFL learners, dictionary word look-ups often include unknown kanji, which can create frustration and confusion—therefore, rapid kanji-to-kana translation can be provided for all kanji appearing in the dictionary. Third, typical dictionaries do not contain semantic look-up categories, which are beneficial to learners and speed learning—through software implementation, it is possible to design a variety of look-up methods and particularly, lexical look-ups can be included in the dictionary design. Both EFL and JFL learners can benefit by hearing as well as reading all terms and sentences contained in the dictionary, in both languages—voice-synthesis technology allows for this possibility. Thus, we began this project in order to effectively eliminate shortcomings and aid learners in their desire to acquire a target language. This paper updates and partially revises the research reported in Gilbert and Matsuno (2000). Essentially, novel voice-synthesis elements have now been integrated into the BMD program and pilot-tested. Program software allows the database to be accessed and searched by several methods, including: Word Entry, Partial-Word Entry, Jump Searches and Jump Searches Across Languages, Lexical Category Searches, and Lexical Correspondence Searches. Program software also allows for text search-strings to be entered in the Roman, kana, and kanji alphabets.

The BMD is designed to provide a vocabulary database easy to use for beginning students of either Japanese or English. For JFL learners: Japanese word and sentence text appears in the typical written style of kana and kanji. This benefits JFL learners by providing accurate examples of written Japanese, thus aiding not only in kanji recognition but in associating kanji and kanji compounds with their varieties of pronunciation. JFL learners often have trouble comprehending kanji pronunciations, therefore, a means of converting kanji to kana has been implemented—the learner right-clicks the mouse and selects “KANA” from the menu that pops open (Figure 3). The kana associated with the kanji then appear in a small window. Thus, a JFL student without the ability to read kanji is able to acquire kanji pronunciations. A JFL learner does need to have familiarity with the hiragana script. Both hiragana and katakana tables are provided for learning purposes and are easily accessed from the main window via buttons (there are also suggestions for how to learn kana contained within the “Help” section of the program).

EFL learners can benefit from associating written English, with its many spelling idiosyncrasies, to the spoken word. English pronunciation can be practiced by playing multimedia clips that demonstrate a native-speaker’s mouth-movements and intonation. We feel that this function is more effective than merely observing phonetic symbols and/or purely aural listening. As well, EFL students responded particularly well to the video clips (see “Section 4”). All mirror-sentence pairs can be listened-to by utilizing the text-to-speech voice-synthesis feature. This feature functions by highlighting either part or all of either a Japanese or English sentence, then right-clicking the mouse and selecting “LISTEN” from the menu that appears (Figure 3). We feel that these design features can make a contribution to foreign language education and provide enjoyable learning opportunities for students, while enabling teachers to develop educational strategies which incorporate computer-aided instruction into course curricula.

Strategy

After consulting word-frequency resources, we created a highest-frequency database of 2000 English words (see “Reference” section). Additionally, some 225 words and sentences related to information technology are included. Each word-entry is paired in Japanese and English. A sample sentence with a closely similar meaning, in both languages, has been composed. Thus, each bilingual entry represents an English/Japanese word-pair and sentence-pair with nearly identical meanings in the two languages. After locating an entry, a user can optionally read, hear and/or view a multimedia demonstration of the word or sentence, in either language. As well, a learner can find new words through lexical correspondence, and jump search using any elements or terms visible in the main window, simply by highlighting them, right-clicking, and selecting “SEARCH” (Figure 3).

We have designed the user interface of the BMD to be easy to use, so that an EFL/JFL learner can devote their main energies to learning tasks, rather than struggling with the software. We have planned our program strategy to provide for multi-modal searching via an interface which includes all functions for normal program use either visibly on the main window, or by right-clicking the mouse. A learner does not normally need to access pull-down menus to use the program. Below is an illustration of the main program window (Figure 1). We will describe the BMD program in more detail in the following section.

Description: Bilingual Voice-Synthesis Mirror Dictionary Program Functions

A First Look

The BMD program is composed of two primary interface windows, the main window, above, and the lexicon window, illustrated in Part E: “Lexical Category Searches,” below. There are two large buttons on the lower-left side of the main window: “English Help,” and “Japanese Help.” (All ‘Help’ information is likewise available through the pull-down “HELP” menu at the top of the main window.) Clicking “English Help” displays a short list of menu items: “How to use this dictionary”, “What is kana?”, and “Dictionary Functions.”

Topic 1. “How to use this dictionary” English users will find important setup information, such as where to locate and download the Japanese “language pack” freeware support associated with the Microsoft Internet Explorer 4/5 browser (IE-4/5). This software, easily installed, allows non-Japanese Windows 95/8 operating systems (OSs) to read and input Japanese characters. It is our goal to set up the BMD as a web site on a CGI server, and therefore the BMD will be able to be accessed by learners who do not run Windows 95/8 English OSs, potentially around the world. A second mode of implementation can be provided for the non-Japanese Windows OS by CD-ROM delivery, with all data being presented in HTML format, through the user’s web browser. (At present, the IE-4/5 browser is the only browser that provides freeware Japanese language support, which allows for both the reading and inputting of Japanese characters within the non-Japanese Windows OS browser.) Please note that the bilingual resource database can be implemented from CD/DVD-ROM on any non-Japanese Windows OS system as long as the program is set up to be accessed as HTML pages, through the MS Explorer 4/5 browser, with the aforementioned language support. DATABASE WINDOW

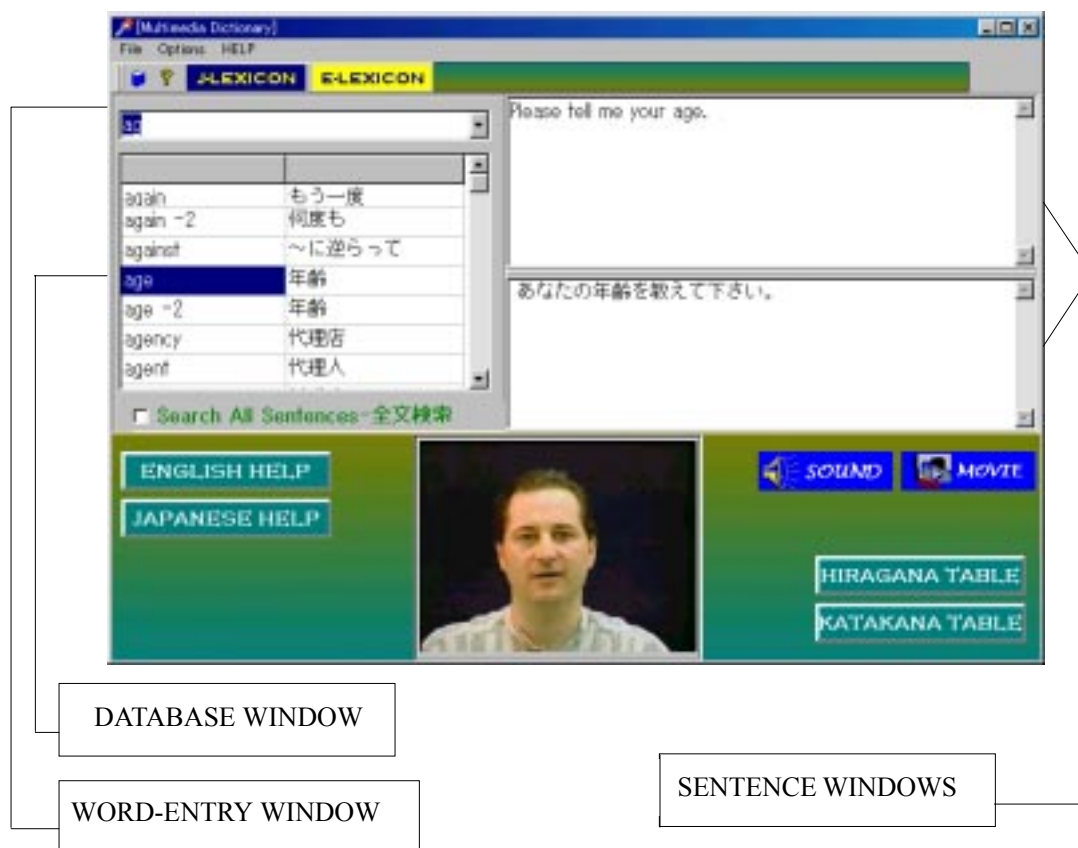


Figure 1. Bilingual voice-synthesis mirror dictionary program

Topic 2. “What is kana?” is provided to explain the kana scripts and indicate the need for hiragana knowledge, a requirement for reading kanji pronunciations. Generally speaking, students who are using the database to increase Japanese vocabulary knowledge will likely either be studying or have previously mastered hiragana. This section also refers users to educational materials for learning kana, and directs the user to the two buttons on the lower-right side of the main graphic user interface (GUI) window: “Hiragana Table” and “Katakana Table.” Pressing either button reveals the respective kana chart, with pronunciation guides annotated in romaji (Roman letters).

Topic 3. “Dictionary Functions” describes basic dictionary usage functions, as described just below in “Japanese Help”:

The “Japanese Help” button is a mirror of the just-mentioned Topic 3 “Dictionary Functions” in the “English Help” section. Topic 3 provides information relating to these dictionary functions: B) Word Entry; C) Partial-Word Entry; D) Jump Searches and Jump Searches Across Languages; E) Lexical Category Searches; F) Lexical Correspondence Searches; G) Other Features.

Word Entry

The word-entry window on the upper-left side allows users to type in words. When a word is typed in Roman letters, English words appear in the database window on the left side, with Japanese translations on the right side, parallel to the English entries. The reverse is true for words entered in kana or kanji. Single-clicking on any word-entry displayed in the database window allows for use of the multimedia tools. By pressing either the “Sound” or “Movie” buttons, the user can hear and/or see the selected word spoken. If a film clip or sound file has not been associated to the entry, the “Sound” or “Movie” button will not automatically highlight. Double-clicking on any word in the database first highlights the field (single-click), then (double-click), displays the sample sentence-pair within the sentence windows located on the center-right side of the GUI. If an English word is double-clicked, an English sentence appears in the top window. The reverse happens when a Japanese word is double-clicked (the program is designed as a non-biased mirror of both languages). Clicking anywhere in a sentence allows that sentence to be heard and/or seen, when the “Sound” or “Movie” buttons are pressed. These buttons are located just below the sentence windows. A Quick-Time video clip can be seen playing, bottom-center, in the “Main Window” illustration.

Partial Word Entry

Letters, kana and/or kanji representing partial word entries can be entered (in a manner similar to “Word Entry,” above), and the program will display all the words in the database which contain letters matching the entry. Entries containing (?) and (*) can be used in making partial word-searches, where (?) represents a single unknown Roman letter, kana or kanji, and (*) represents an indeterminate number of characters. So typing “a*ment” will find both “Argument” and “Agreement.” Typing “A???ment” will find “Argument” only. Typing the letter “a” will find all English words beginning with “a”: typing hiragana “ka” will find all Japanese words beginning with the character “ka.” Typing (hiragana) “*ka” will find all Japanese words containing the character “ka” somewhere within the word. The program works in a similar fashion for kanji. The program is not case sensitive.

Jump Searches and Jump Searches Across Languages

Jump searching can occur in a number of ways. Often a jump search will occur when a user wants to find a translation for an unfamiliar word occurring within a sample sentence. Whether in Japanese or English, one or any number of consecutive kanji, words, or letters, can be highlighted. Right-clicking within the highlighted area brings up a menu. Choosing “SEARCH” allows you to search for all entries that match the highlighted section. If the “Search All Sentences” box is checked (located just below the database window), all sample sentences containing that word (or kanji, or phrase) are searched for, and the sentence-selection results are displayed in the sentence windows. Importantly, if the “Search All Sentences” box is checked, the user can locate all sentences within which any word in the database is to be found—the user simply high-

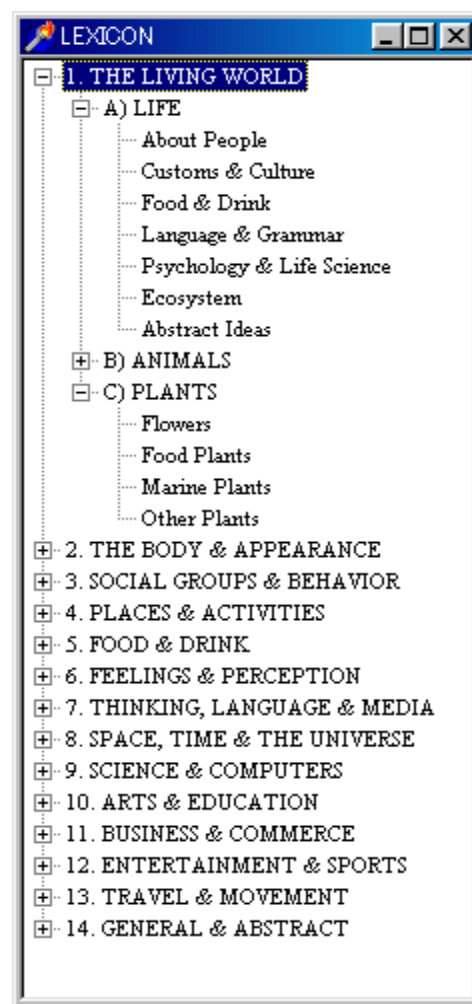


Figure 2. Lexicon window

lights a word, right-clicks the mouse, and chooses “SEARCH.”

When jump-searching across languages, a student may start with an English word lookup, then find a Japanese sentence which mirrors the English sentence. Examining the Japanese sentence, the student sees an unfamiliar word, highlights it, searches, and finds the translation of that word in English. Finally, the student can observe an additional usage of the new word by examining the sample-sentences that accompany the new word, in the database.

Lexical Category Searches

The bilingual resource database contains two mirror-lexicons. The English lexicon is illustrated in Figure 2. Pressing the “J--LEXICON” button on the toolbar activates a popup window, activating the Japanese lexicon. Pressing the “E--LEXICON” button causes the popup menu list seen at the right to appear. The lexicon has three hierarchical levels, which can be opened and closed by clicking in the associated squares to the left of the major categories. In the figure to the right, the tripartite hierarchical levels are shown for “1. THE LIVING WORLD,” which is one of 14 global categories. Within “1. THE LIVING WORLD,” the second-order categories are “(A) LIFE,” “(B) ANIMALS,” and “(C) PLANTS.” By double-clicking on any of the third-order categories (visible beneath “(A) LIFE,” and “(C) PLANTS”), the chosen category is moved to the word-entry window (within the main window), and the word-lists associated with the lexical category appear in the database window. The bilingual resource database lexical categories, originally inspired by the *Cambridge English Lexicon*, have been simplified, condensed, and lexically altered in order to suit the needs of second-language beginners. The lexicon lists can be accessed through the “Options” pull-down menu, or by right-clicking the mouse, and choosing “J-LEXICON” or “E-LEXICON” from the mouse menu (Figure 3).

Lexical Correspondence

Lexical correspondence allows the user to associate any word in the database to other, lexically related words. By highlighting and right-clicking on the chosen word, a menu appears which allows the user to choose “Lexical Search.” After making this choice, the program automatically puts the lexicon category title in the word-entry window, and the search-word will be found beneath, still highlighted, and within the listing of lexically related words in the database window. Double-clicking on other words in the lexical list causes sample sentences to appear in the sentence windows. Note that the “Lexical Search” selection has not yet been added to our mouse menu—this feature is currently under development.

Text-to-Speech Voice Synthesis

There are two forms of aural output designed into the BMD software. As previously mentioned, single word entries, that is, the 2000 most-frequent word items, each have an associated .wav file (these will be converted to MP-3/streaming audio files in the future). By this means, learners are able to listen to highly accurate pronunciation performed by a native speaker. However, for the sample sentences, text-to-speech synthesis (TTS), which is admittedly far from perfect pronunciation (the English TTS sounds remarkably akin to Professor Stephen Hawking), has some advantages: 1) There are no production or post-production issues—any sentence written can be “spoken” by the software, consequently 2) audio file size is zero (there are no audio files); 3) sentences can be easily altered and/or added to the database, thus providing ease and flexibility of development; 4) the synthesized speech is communicative; 5) voice activation is rapid; 6) future web implementation can include a TTS streaming component, allowing for any text viewed in the program to be heard, in either language. Currently, TTS is accomplished through two associated external software packages: IBM’s “Via-Voice” for the English TTS, and Catena’s “D-Talker” for the Japa-

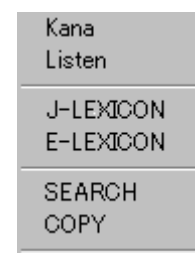


Figure 3.
Mouse menu

nese TTS. We will be integrating internal voice modules into the BMD software, in the future.

Other Functions

The “Options” pull-down menu contains a “Dictionary” tab. When selected, a default folder opens, which contains the database files used by the bilingual resource database. The user can selectively load one or more databases into the program. Currently, there are two database files that have been created: the “word-frequency” database and the “information technology” database; both can be loaded concurrently. The mouse right-click menu contains “Copy” and “Paste” functions, allowing the user to move information within the bilingual resource database and to other programs, if there is associated language support. The “File” pull-down menu contains an “Exit” tab, which closes the program.

Pilot Study and Discussion

In a preliminary pilot study, a group of five “false-beginner” level EFL students were given CD-ROM copies of the BMD to test for a period of three months. The students were third-year undergraduates studying in the Liberal Arts (Sogo-Kanri) faculty of The Prefectural University of Kumamoto, Kumamoto, Japan, and involved in a seminar on information processing. Use of the BMD was not a requirement of the seminar, nor were the respondents’ answers or ability to utilize the BMD part of the seminar grading process. At the end of the trial period, students were interviewed, and anecdotal information was gathered. This early study was performed for the purposes of information-gathering only. Future studies, with larger groups and controls, will need to be carried out. Students were asked these questions:

1. How did you like the program?
2. What were the most useful features of the program for you?
3. Did you encounter any problems or have some frustrations with the program?
4. What areas of the program would you recommend be improved?
5. What new features would you like to see in the program?
6. Would this program be valuable to you for studying English in a college classroom setting?

All of the students found the program easy to use, and generally liked the ease with which search words could be entered, the mirrored (audio-visual, where applicable) means of bilingual presentation, the voice-synthesis function, and the lexicon search function. The most useful feature reported was the ability of the BMD to play QuickTime video of English words. Being able to hear, “see,” and repeat a native speaker’s pronunciation of terms instilled confidence. The second most useful feature was the presentation of bilingual sentences, combined with the ability to easily listen to the sentences, using voice-synthesis. The multimedia functions of the dictionary were reported as being “fun to use.” We also observed students using the multimedia functions—students quite unabashedly attempted to emulate the voice/video demonstrations. Frustrations were most evident concerning the small size of the database, the lack of additional usage variations for some individual entries, and the lack of portability of the program. Students mentioned that the program would be valuable in a classroom setting, particularly if the usage sentences were expanded.

We would concur with the survey results that the area most in need of development to make the BMD a useful educational tool is database expansion. Creating bilingual sentences with mirrored meanings for each usage of each word entry is slow going, requiring many hours of preparation and quality control, including thorough independent analysis of usage sentences. As well, portability is always an issue with any CALL media.

In the future, we plan on adding further database resources, including a matching list of the 2000 highest-frequency Japanese words, multiple examples of word usage, enhanced search capabilities, and additional means allowing for user-customized additions to the database. The incorporation of a greater number of word-entries and, particularly, word-usages will be necessary before the program can serve as a fully functional and effective educational tool. Along with additions to the database, developing a means of interactive internet accessibility to the BMD remains a high priority.

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Building Bridges to Inclusive Foreign Language Education through Appropriately Applied Technologies

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Abstract

The subject of this paper is the evolution of a foreign language teachers' pre- and in-service training website at <http://www.tomwilson.com/david/case/>, focusing on special educational needs. It features case studies of dyslexia, hearing impairment and moderate learning difficulties, accompanied by problem-solving exercises. It also identifies common issues of classroom practice arising from the use of information and communications technology and encourages problem-solving via external links. It has been successfully trialled with student teachers of foreign languages at a local university and with serving teachers in the modern foreign languages department of the author's secondary school. The paper describes how this website was conceived to raise student foreign language teachers' awareness of special educational needs and information and communications technology, how its external information sources were chosen and how the project aimed to facilitate the process of introducing a foreign language to all 11- to 14-year-olds in English mainstream schools.

Introduction

In February 1999 I conducted a special educational needs (SEN) and information and communications technology (ICT) workshop for student teachers of modern foreign languages (MFL) at the University of Newcastle upon Tyne in the north-east of England. To accompany this half-day session, I designed a website entitled *Applying new technologies appropriately to modern foreign languages* (Wilson 1999a).

I have divided my description of this project into three sections. The first gives an overview of the historical, professional and technological context. In the second, I relate how my teacher education initiative in MFL, SEN and ICT evolved. The third section lists the main outcomes of the exercise.

The Background

In this section I describe the broader context of my project and more especially:

- The policy, principles and practice of including all secondary school students in MFL learning;
- The collaboration of subject teachers and learning support professionals in the delivery of MFL to all students;
- The appropriate application of ICT to MFL classroom practice with particular reference to SEN students.

Languages for all

Ten years ago the British government introduced a National Curriculum requiring all 11- to 14-year-olds, including those with learning difficulties, to follow a MFL course (Whitehead 1990). This *entitlement*, as it became known, was due to be extended to all 14-to-16-year-olds at a later date.

Underlying this policy of languages for all in the 11-16 age group was a recognition that the United Kingdom could compete more successfully in Europe and world-wide if the country discarded its image as a nation of monoglots. In 1988 the then European Community's Ministers of Education had also agreed to make language learning the key to education for European citizenship (McColl 2000).

Another factor promoting languages for all was equality of educational opportunity. For much of the twentieth century, British foreign language learning had remained the virtual preserve of an academic élite. The entitlement of all 11-to-16-year-olds to study a foreign language signaled a new determination to include every school-age student in mainstream education.

On the one hand, turning principle into practice proved something of a challenge for many teachers and students alike. Because grammatical concepts and other hard elements of MFL study cannot be postponed for ever, some teachers argued that learners in difficulty might drop one MFL and start another halfway through their secondary education. Certain SEN professionals wondered too whether teaching MFLs to youngsters with learning difficulties was counterproductive in the light of such students' literacy weaknesses.

On the other hand, British MFL curricula had already grown more inclusive. In the late 1970s, local teachers devised syllabuses and tests based on survival language with school trips abroad in mind. In the 1980s, public examination emphasis shifted from grammar and translation skills to the use of language as a vehicle of communication.

Building through teamwork

In the early 1990s, several projects successfully piloted language teaching to students with special educational needs. A strategic difference between ordinary and special schools and between MFL specialists and specialist teachers of pupils with SEN soon emerged. The first group began with the demands of the subject, the second with the individual needs of the particular student. Successful language learning for all students with SEN ultimately required a skilful and sensitive combination of both approaches.

The MFL/SEN research literature of the 1990s reflected these differences (Wilson 1999b). MFL specialists contributed small, practical, classroom-based studies of the issues of training and support and the implications of specific types of learner. Educational psychologists conducted larger-scale, theory-driven investigations of the second language processing of students with learning difficulties. Such research ranged from an in-depth analysis of a single learner to an extensive, long-term study of numerous "at-risk" students.

The turn of the millennium, however, promises to bridge the gap between the special educator and the foreign language teacher. In 1999 speakers at the First International Conference on Multilingualism and Dyslexia in the North of England city of Manchester not only disseminated the latest research about the identification of MFL learning difficulties, but also defined multisensory strategies of use in teaching at-risk students. This combination of psychological theory with classroom practice is a continuing trend.

Applying technology appropriately

The principle that ICT may broaden the access of pupils with SEN to the National Curriculum in general, and to the MFL curriculum in particular, was officially recognised from the start. ICT was deemed to offer all students, including those with SEN, learning opportunities which contribute both to MFL development and to students' personal and social development.

Pilot MFL/SEN projects paid tribute to the successful integration of ICT in most schemes of work among the project partners. A review of MFL/SEN literature revealed widespread classroom deployment of ICT too. Later policy documents acknowledge that certain learners require computers and other technological aids to carry out attainment targets in MFLs. All students should be given opportunities, where appropriate, to develop and apply their ICT capability in their study of modern foreign languages

Appropriateness not only means curriculum compatibility but also a sense of ownership by teachers and learners. During my year abroad in France in the late 1960s, I opted for an advanced French for foreigners course at the local university. I was keen to improve my listening skills and was excited at the prospect of using a language laboratory for the first time. All I remember of the experience, however, is vainly grappling in my booth with pattern drills requiring thirty-word sentences to be heard and reproduced at speed from memory in the imperfect tense. Later, as a young teacher of MFL in an English school with a language laboratory, I resolved to set my students more appropriate tasks.

The Project

In this section I turn to the project itself. I describe

- the **design brief** of the project, with special reference to the university education department's remit;
- the **problem-solving** approach characterizing the tasks in the project;
- the **case studies** used in the project to represent a selection of special educational needs.

Design brief

I work in the Metropolitan Borough of South Tyneside in the North East of England. South Shields in the east of the borough is a pleasant seaside resort, burdened with more than its fair share of social, economic and educational disadvantage.

A third of the 1,200 students in my over-subscribed 11-16 comprehensive school, now a Technology College, qualify for free school meals. Typically 30% of the boys and 20% of the girls leave primary education with reading ages two or more years below their chronological ages. Although a tiny minority of these learners later transfer to local special schools, most remain in mainstream education receiving their full National Curriculum entitlement, including MFL.

As a Learning Support Teacher, I am responsible for the 35 boys and girls aged 11-12 with learning disabilities, behavioral difficulties, sensory impairments and other special educational needs. I also teach French and German to slow learners in the 11 to 14 age-group, often using ICT as a resource.

In the autumn of 1998 the modern languages tutor in the education department of the University of Newcastle upon Tyne invited me to deliver an Initial Teacher Training (ITT) workshop on SEN and ICT. The attendees had graduated with a first degree in one or more MFL and completed a diagnostic teaching practice. At least one was a native speaker of the foreign language she intended to teach. Their ICT literacy skills varied but surpassed those of earlier generations of student teachers. The one-year ITT course had so far delivered just a modicum of theoretical knowledge and practical experience of teaching students with SEN.

Scheduled for an afternoon in February 1999, the workshop had a dual remit:

- Use of ICT, particularly online resources, in MFL teaching;
- Recognition and support of SEN in the MFL classroom.

Since I was reluctant to duplicate the efforts of others, I began with an extensive search of the online and printed literature.

The World Wide Web (WWW) already had a number of sites designed to help MFL teachers with Internet usage. Among them were the Web-Enhanced Language Learning *Treasure Hunt* (WELL 1999) and the *Voilà! Bitte schön!* pages compiled by University of Sheffield student teachers (Woolley & Hamilton 1998). Exploiting such

off-the-peg packages might have reduced preparation time and at least partially fulfilled the first requirement of the workshop brief.

If so, the second issue — introducing the student teachers to the principles and methods of including learners with SEN in MFL — remained to be addressed. MFL/SEN literature reviews revealed that most publications came in conventional printed format (Wilson 1999b). Two exceptions were *The Instant Access Treasure Chest* (Moore, 1999) and a British Dyslexia Association information sheet about MFL teaching and learning (Crombie, 1996), which were available online.

So far as I could ascertain, a few websites addressed both issues, although none fully integrated them. The instructional technology site at Longwood College in Virginia offered parallel but separate slide shows on Internet usage (Moore, 1997a) and SEN learners (Moore, 1997b) in MFL.

Over the next few months several meetings were held to consolidate the sequence and content of the workshop. The creation of a dedicated website to accompany the afternoon's proceedings was one of the decisions taken. Such a site would provide hands-on experience on the day and continue to be accessible to any student wishing to review the issues at a later date.

Although this *Applying new technologies appropriately to modern foreign languages* website required many hours of research and planning, it was written in Word 97, saved in HTML and uploaded to its current URL at www.tomwilson.com/david/case/ in a single weekend. It broke down into four parts:

- **Web Skills:** text, graphics and file handling routines;
- **Case Studies:** teaching MFL learners with a variety of SEN;
- **Problem Solving:** MFL classroom problems and online solutions;
- **Slide Shows:** PowerPoint presentations charting workshop issues.

The individual pages featured a plain, simple and uniform style to focus attention on the tasks within.

Problem-solving

In ICT-based subject teaching in general, and computer-assisted language learning (CALL) in particular, reflective classroom practitioners must ask themselves: “If technology is the answer, what is the question?” Education remains a very human partnership, founded on social interaction and mutual trust. Wholly computer-administered courses have a variable track record.

The WWW too is best approached with a modicum of skepticism. Although ready-made solutions abound on educational websites, the pre-existing problems may be ill defined. Panaceas seldom prove efficacious when individual teachers apply them to ‘exceptional’ students. SEN learners routinely challenge the belief that a particular tactic never fails. Because they need a balance between consistency and variety, even ICT eventually palls as a classroom resource.

When I conducted my first SEN/ICT workshop a number of years ago, one teacher observed: “that would not work with my students.” He had a point. I had presented my teaching strategies without explaining the prior decision-making thoroughly enough. Ultimately, the definition of the initial problem and the rationale culminating in my particular solution mattered, not the solution itself.

So an appropriately defined problem and an appropriately applied problem-solving process precede an appropriate solution. In accordance with this principle, I took pains to devise a practical teaching problem before offering a potential solution in the form of an external link on my website. Sometimes a serving teacher's question to an online discussion group, e.g. Lingu@Net or SENCO Forum, furnished the problem while the ensuing thread, or replies, exemplified worked solutions, simultaneously enhancing the authenticity of the process.

A problem-solving approach also suited the overall workshop ethos. Imparting information about the theory and practice of SEN and ICT in MFL to passive listeners was never the intention. Raising awareness of classroom diversity and inclusion issues involved brainstorming ideas, questioning beliefs, and challenging stereotypes, e.g. SEN labels are synonymous with low intelligence and motivation.

Finally, problem-solving is a distinctive feature of the social constructivist theory of learning, with which the Russian psychologist and philosopher Lev Vygotsky is often associated. Vygotskian learning theory challenges the conventional wisdom that there is one correct response to every question and that students must acquire a finite body of knowledge before they can arrive at this answer.

Vygotsky's idea that learning is a social and collaborative activity and that students need to construct their own understanding of a problem and its solution has long underpinned curriculum renewal in the United Kingdom. It also defines many current subject-teaching initiatives there, notably the "Thinking Skills" projects in Humanities, Science and, at the University of Newcastle upon Tyne, in MFL.

Case studies

Social constructivism also relies on case-based evidence to provide a meaningful context in which problem-solving can take place (Chen n.d.). A case study has a number of advantages as a MFL/SEN/ICT professional development tool:

- It is a way of exploring a particular aspect of a situation or problem within a limited time span;
- In SEN, the focus is often on multiple agencies contributing different kinds of expertise to the support of one student with learning difficulties;
- ICT action research usually investigates principles and practices within a single institution, department or classroom.

Although rule-based reasoning may have cerebral appeal, a human scenario engages all faculties, including the imagination, and encourages creative problem-solving.

Initially, four case studies were created, each starting with a classroom dilemma, ending with a series of tasks and focusing on a single learner. The first concerned a foreign national whose mother tongue also happened to be the TL in the MFL classroom:

Heidi is a girl in your Year 7 MFL class. She has just arrived from Zurich, where she attended primary school. She speaks Swiss German but very little English. German is the First Modern Foreign Language in your school. You have inherited Heidi because your more experienced fellow-linguists are anxious about the impact of native speakers on their classes. They say she may become frustrated at the slow pace of lessons, confuse other pupils with her non-standard pronunciation of German and out-perform the teacher in the target language. They claim that you are her 'best bet' as you are the most accurate and fluent Germanist in the department. The Special Needs department has arranged for Heidi to work with a teacher of English as an Additional Language (EAL), who could withdraw her from German lessons if you wished. The Special Educational Needs Coordinator (SENCo) has already spoken to Heidi's mother and ascertained that Heidi may have literacy difficulties in German. Heidi's mother wants her daughter to study German at school as the family may return in a few years' time to Switzerland.

Problem 1: How can the school's Modern Foreign Languages and Special Educational Needs Departments collaborate in assessing Heidi's prior learning and in delivering her full National Curriculum entitlement?

Problem 2: Heidi tells you that another pupil is calling her a ‘Nazi’ because her home language is German. Such verbal abuse is damaging Heidi’s self-esteem and undermining your school’s commitment to race equality and multiculturalism. You decide to turn Heidi’s bilingualism and biculturalism into assets, not liabilities.

I purposely began with a case study of a native TL speaker with reading and writing difficulties because I wanted to provoke any student teacher harboring notions about SEN always meaning disaffection and underachievement.

The other three case studies were designed to illustrate certain major categories of special educational needs, namely:

- Specific learning difficulties (dyslexia);
- Moderate learning difficulties;
- Hearing impairment.

All steered the same course as the foreign national case study, accentuating the positive qualities of the learners without glossing over the discrepancy between what they brought to the curriculum and what the curriculum demanded of them (Wilson 1999a). In the interest of anonymity, the subjects of the case studies represented ‘composite’ characters.

The student teachers were expected to engage twice with this casework portfolio. During the off-computer session, they would debate the native speaker scenario, then form three smaller groups, each entrusted with one of the remaining cases, meeting for a plenary to provide feedback. In the second half of the workshop, they would access the cases on the WWW via a PC or Mac computer. The online version had links leading to external websites where others had grappled with the same problems ‘for real.’

The Outcomes

I duly ran the “Applying new technologies appropriately to modern foreign languages” workshop during the afternoon of February 21, 1999 in the Education Department of the University of Newcastle upon Tyne. The choice of a foreign national as the opening case study proved apt, not only because a bilingual student teacher was in the audience, but also because it generated the most heated discussion. Furthermore, each group selected a different case — specific learning difficulties (dyslexia), moderate learning difficulties and hearing impairment — without prompting and unraveled the inclusion issues.

The workshop and its accompanying website were later deployed in:

- In-service MFL teacher training (Internet usage) at Harton School in South Shields;
- Pre-service MFL teacher training (WWW materials development) at the University of Sheffield.

The reception on both occasions was uniformly favorable. Website visitors outside these institutions have also given positive feedback.

One constraint was the current paucity of educational information about MFL and SEN on the WWW. Perhaps reflective classroom practitioners have neither the time, nor the confidence nor the inclination to disseminate even their personal successes when teaching MFL to SEN learners. Psychologists and medical researchers investigating learning disabilities are only too eager to share their own findings.

The extensive planning and research preceding the development of the website certainly proved worthwhile. Recently I added a fifth case study, based on a learner with visual impairment. The success of the website also encouraged me to produce a similar WWW resource bank for other subjects within my school. To date, I have

compiled modules for Design Technology, Geography, History, Mathematics, MFL, Music, Religious Education and Science (Wilson, 2000).

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Building Bridges: Using Email and Video to Promote Intercultural Communication

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Abstract

As teachers in the newly-created Comparative Cultures Department of Aichi University, we encountered problems familiar to many teachers of a foreign language: multi-level classes, multi-cultural materials better suited to an ESL environment, or texts that focussed upon language structures familiar to many of our students since jr. high school. Given our department's mandate to address issues of intercultural understanding and communication, using English as the tool of instruction, rather than as the focus of study, we decided to have the students generate class materials in the form of an e-mail and video exchange. Many of our students commented that this was the first time they had used video in their school careers, and most students were extremely happy with both the process and the results. We observed students gaining confidence in expressing their ideas in English, and found that they were highly motivated to share cultural information with their Canadian partners.

Rationale

Our decision to implement an e-mail and video exchange project was based upon four major considerations:

Our Teaching Situation

We teach for Aichi University's Department of Comparative Cultures. Our Departmental mission is to broaden cultural awareness, encourage tolerance and understanding of world cultures, and create opportunities for cross-cultural communication. The expectation is that English will be the *tool* for instruction, rather than the focus of study. However, our students are typical Japanese university students, and no special proficiency in the English language is required to enroll in our courses. Thus, we must assist our students in improving their reception and production of the English language within the context of our curriculum.

We decided that a video exchange project would provide our students with an opportunity to improve both production and listening skills through the sharing of first-hand information about inter-cultural topics. Students would have an opportunity to examine their own cultural values and perspectives, and the videos from their North American counterparts would provide materials for cross-cultural comparisons. Preliminary research could be carried out via internet, interviews, and email, requiring the unstructured application of all language skills. Small groups would produce and edit the videos, and the class as a whole could develop evaluative criteria and apply them to their own and others videos. This approach would help us to manage our multi-level classes, as each student could work at his/her own level of language development and be evaluated fairly on the basis of his or her contribution to the whole project. The development of both receptive and productive skills would be facilitated, and the language structures acquired would be those necessitated by the situation, and would thus be more functional and more likely to be retained (Krashen, 1985).

We first thought of the email exchange as an introductory activity that would forge closer relationships among participants and help them to decide upon topics of interest for the videos, but we soon recognized the added value of the email exchange in improving students' reading and writing skills. Thus, both the email exchange and the video exchange brought about a happy integration of language skills and cultural sharing.

Materials

When we first came to Aichi, we had only the few materials that we brought with us. We spent an inordinate amount of time that first term creating teaching materials. As we reviewed materials for our second term, we found little that met our students' needs: few materials were suited to multi-level classes; the range of English in most texts was very limited; many were repetitive- students had been studying these same language constructions since middle school; and the few texts which had a multi-cultural focus were better suited to an ESL environment rather than an EFL classroom.

Our most effective materials that first term had been student-generated materials. Student Journals were backbone of all of our courses. Each week, students were required to write one full page about an assigned topic, which might be a quotation, a news item, a response to class discussion, or even a self-evaluation of their progress. The Journal entries then became the content for the next class. A second resource was the Internet. Students researched topics individually and in groups, and shared these articles with the class. Students enjoyed this exercise, and, again, their language skills improved in the context of a multi-cultural curriculum.

We found that student-generated materials can have many advantages over materials chosen by instructors: they are contextual; they are likely to be of greater interest to students; they force students to apply evaluative criteria in their selection; they promote critical thinking and an awareness of audience; they provide an opportunity for students to examine their own views and values; they offer an authentic voice; their range of expression is infinite and variable; and each student can work effectively at his/her own level. We decided that, with the exception of an introductory reading that would serve to develop a structural theme for the course, all of the materials for our upper-level conversation courses would be student generated. For three sections of the second and third year conversation classes, a video exchange project would provide the focus, the continuity, and the materials for the entire course.

Participation

A third reason for our implementation of the video and email exchange project was to encourage students to take more responsibility for their own learning. Because of their previous educational experiences, Japanese university students tend to be very passive in the classroom (Anderson, 1993; Williams, 1994). They have been conditioned to view learning as a receptive function, rather than as an activity over which they can exercise some degree of control. They expect their teachers to structure their learning, and to some degree, their thinking, for them. They also lack confidence in their own capacity to evaluate situations and make appropriate responses. Unfortunately, these habits slow their progress as language learners, as well as impede students' development as competent observers and critics of their own and other cultures.

Japanese culture also shapes our students' relationships with one another in the classroom, and these cultural pressures often result in students preferring to remain silent rather than risk disapproval or cause offense to classmates (Lebra, 1976; Doi, 1971; LeTendre & Rohlen, 1998; Doyon 2000). At all levels, but especially in our combined second and third year classes, there are issues concerning the appropriate behaviour of junior and senior class members, those of lesser and greater ability, and, even, females and males. The desire not to stand out or to not appear more competent than one's classmates, fear of criticism, shame, and a host of other cultural and personal behaviours lie behind the notorious "shyness" of Japanese foreign language learners and must be accepted as part of our students' cultural and personal identities, even as we strive to create a classroom environment in which students can overcome the problems that shyness and reticence pose for second language learners.

A video project appeared to be an ideal means of addressing these affective and behavioural concerns. The success of the project would depend upon significant oral and generative contributions from each member, thus facilitating individual progress and encouraging individual initiative within a supportive group environment. Students could negotiate relationships within their small groups in ways compatible with Japanese cultural expectations, but they also would be forced to experiment with new paradigms as they worked through certain specific steps that we devised to encourage more collaborative ways of completing group tasks. Because these new paradigms were integrated into the process, less risk would be involved in initiating activities and voicing preferences.

The video project would also actively engage students in their learning as they deliberated meaningful choices, responded to the unforeseen, and experienced the consequences of their decisions. To this end, each group would exercise full autonomy (within the guidelines and objectives of the project) in choosing topics, assigning tasks, and completing their video. They would participate in developing the evaluative criteria used to assign a final grade to their own and to their peers' videos. They would be responsible for scheduling the use of the camera, seeking permission to film in public places, obtaining releases from interviewees, and returning the equipment promptly and in good repair. Finally, they would assume a mentor role as they described their project and dispensed advice to future groups. From beginning to end, students would have to assume an active role as group members and as individuals.

Authentic Communication with Native Speakers

Our program attracts students whose career goals include some aspect of international communication. Students are expected to participate in field research, exchanges with sister campuses, and various travel and study abroad programs arranged through the University or independently. In order to have a successful international experience and to further their own personal and career goals, students need to engage in authentic communication with native speakers. However, such opportunities are limited in an EFL environment.

Email and video exchanges move students from the familiar, sheltered ground of the classroom to an unstructured environment where they can test their linguistic and pragmatic competence. Students have more opportunities to generate original speech and to experience an authentic, native-speaker response to their use of language. They must sustain conversations and perform a larger range of communicative tasks than can ever occur in an institutional setting. Also, students must understand the social, cultural, and pragmatic contexts in which cross-cultural communication takes place. Few language texts address these issues in any depth, and classroom instruction in these matters does not adequately prepare students to respond appropriately or to find solutions to the communicative dissonance that occurs when diverse cultures meet (Capper 2000). Email and video exchanges allow participants to negotiate discourse and experience an authentic response within a cross-cultural context.

Procedure

Implementing the video and email exchange project in our department was a major decision. For the reasons outlined above, we believed that it would benefit our students, and we were willing to commit to the extra time and effort necessary. Even though we had incorporated the use of email and video into previous classes, making email and video exchanges the main focus of a full-term course was a new experience both for instructors and students. Over the three terms, the video and email exchanges evolved as we discovered ways to improve this project.

Participants

The email and video exchanges involved classes of second and third year English Conversation students in the Department of Comparative Cultures at Aichi University, and middle school classes in Coquitlam, B.C., Canada. The teachers of these middle school classes were eager to become involved in the exchanges because a unit on Japan is included in their social studies curriculum. They were very interested in broadening the range of understanding that their students could gain about this country by directly communicating with students in Japan.

The university students were very happy to have grade eight and nine students as their partners. While the exchanges were progressing, students repeatedly commented that they did not feel as anxious about communicating with younger students as they might have with Canadian university students. For these reasons we felt that the partnership was beneficial to both sides, and we continued the exchanges over the next two terms.

Introduction of the Project

Before the email and video exchanges began, we started to prepare our students for this project. In the first term, journal writing and discussion focused on students' feelings about being involved in the exchanges. Some voiced concerns about being nervous in front of the video camera, or feeling worried that their English was not good enough to complete the exchanges. Essays exploring the theme of cultural identity were used for journal writing and discussion. Small groups of students researched and made presentations about aspects of Japanese culture that might be of interest to their Canadian partners. Class discussions also helped students to find topics and questions for the upcoming exchanges.

During the second and third term that we implemented the project, we also watched video segments made by previous participants in the exchanges. Students saw that their peers were able to successfully complete the video component, and this helped to ease any anxiety that they had felt. We discussed filming techniques and developed criteria for evaluation of their own and other's videos.

Video cameras were brought into classes early in the term. The first short video activity involved students simply introducing themselves on camera. The presentations on Japanese culture were filmed at a later date, and both of these videos were watched in the class following the filming. This allowed students to become accustomed to seeing themselves on video and using the video camera. Groups were invited to borrow the cameras at any time to practice filming before their final video segment was created.

The E-mail Exchange Component

During the fourth week of classes, students began the email exchanges. The first exchange was completed during class time, and all messages were sent first to the instructors' email addresses. The instructor was then able to monitor the messages, and forward them to the teacher in the exchange country. The students on both sides of the exchange were obviously very curious about life in the other country, and many questions were exchanged on a wide range of topics. A short introduction was also included from each student in his or her first message.

Only the first email exchange was done during class time. The other three messages were assigned as homework, and students again sent the messages via the instructors' addresses. Three of the email exchanges were completed before the finished video was sent to the exchange partners. The final email message was assigned after watching the video from the other country, and allowed the students the opportunity to make direct comments about what they saw in the video.

The Video Exchange Component

In week five, students brainstormed topics for video segments, and groups for the video exchange were decided upon. From this point onward, each group worked at their own pace to plan, film and edit their segment of the final video. Each group created a basic outline of their plan for the segment, and presented their plan to the class. Other groups discussed whether they thought this topic and plan would be successful, and brainstormed problems that the group might encounter while filming. In some cases, groups changed their topics after discussions with their instructor and peers and began the process of planning once more from the beginning.

Along with class discussions about things to consider when filming the video, each group continued to work independently on their video plan. Before being allowed to reserve a video camera, each group had to have a clear plan, including the locations and dates of filming; props or materials they would need to bring with them; permission

from people or establishments that would be involved in their video; and a clear outline of the topic, sub-topics and main points they would make for each scene. They were also required to write a statement giving the reasons why they had chosen their topic and why they believed it was important for their exchange partners to learn about this topic. It was stressed that students should not write out and memorize what they wanted to say, but rather prepare their main points for each scene and speak naturally. The instructors also pointed out that making the video should be enjoyable!

After getting approval from the instructor for their completed plan, students were able to reserve a video camera and begin filming their segment. Groups talked about their progress, and were able to offer each other advice and suggestions. Some groups finished filming their segment in one day, while other groups used the video cameras a number of times to film different locations or re-do sections that they were not happy with.

Class time was used for discussion, small group planning and conferences with the instructors. All filming and editing was done outside of class time, and some groups had to meet on several occasions to finish their video. When groups had finished filming, they were able to reserve the editing room, and the instructors assisted each group as they completed this process. The deadline for finishing all filming and editing for each segment was before week ten of the course. Once each group handed in their edited video segment, the instructors added titles, group members' names, and dubbed each segment onto a master tape. Each class had previously filmed an introduction and conclusion for the tape. A copy of this tape was then mailed to the exchange classes.

Conclusion of the Project

In the tenth week classes watched the completed video, and each group made a short presentation about their experiences. The instructor and other groups assessed each video segment using criteria created by the class. Each group also graded themselves using the same evaluation tool. A class *Academy Awards* was held, in which students voted for the best actor/actress, funniest scene, best camera work, etc. This was a very positive experience for the students.

During week eleven the class watched the video from Canada. Class discussion and journal writing addressed surprising or interesting things that the students found when watching the video, similarities and differences between the two classes and countries, and other topics concerning the email and video exchanges. At this point the final email exchange was assigned, so that students from both classes could tell their partners their thoughts, feelings, and opinions about what they saw in the videos.

During the final weeks of the course, each group was responsible for writing a report that would help future participants in the email and video exchanges. They were to summarize their video and explain why they chose their topic; discuss the problems they encountered and how they solved them; evaluate how the group worked as a team; and give advice for future filmmakers.

Evaluation of the project

Throughout this project, students were involved in the evaluation of their peers. In the first few classes, students worked in small groups to analyze video segments from previous participants in the exchanges. The presentation on an aspect of Japanese culture, which was the first group assignment for the course, was assessed by the class as a whole. Each group completed a peer assessment sheet giving a grade and comments about various aspects of the presentation. The final video was evaluated by both the instructor and the class, using the criteria that had been created when looking at previous participants' videos. Class discussions and journal writing also helped the class to define criteria for evaluating presentations and videos. The email exchange component of the course was evaluated as either complete or incomplete. Early in the course, classes had discussed whether they felt comfortable receiving a group grade for assignments. Students were given the option of an individual or group grade and all of our students chose to receive a collective grade. Presentations, the email exchanges and the video project comprised eighty percent of the students' grade for this course.

Results

We found that the students thoroughly enjoyed this project, and, consequently, these classes had near perfect attendance. The students exhibited, and reported, increased confidence in using English. Most importantly, we found that the students experienced authentic communication in both its linguistic and pragmatic aspects. This is a result that we believe would not have been achieved through textbook study; the students needed to engage in a cross-cultural task that required them to generate original speech and to have their speech responded to realistically. Our students gained cross-cultural awareness and a better understanding of both North American and their own culture through participating in this project.

Problems and Solutions

Problems that we encountered during the three terms of this project included students' initial reluctance about being on video, the amount of time required outside of classes to complete the lengthy planning, filming and editing process.

Students quickly overcame their initial reluctance about appearing on video because the task content was too absorbing to allow them much time to worry. Watching and discussing previous exchange videos and starting with small video assignments and working up to the final video exchange eased students' anxiety about using video. Class discussions, journal writing, and allowing students to work together in groups to reach their final goal also helped to create a positive attitude toward the project.

Time was a major obstacle in finishing the exchanges. Our partnership with a public school in Canada meant that the beginning and ending of our school terms did not coincide. Careful planning on both sides was necessary, and this created added pressure on both instructors and students. Due to the limited amount and availability of editing equipment, students had to complete this part of the project in a very short time. Instructors found it difficult to arrange appointments for the many groups who were ready to edit. When one group's filming was delayed due to technical difficulties with the camera and because a festival was postponed, it was even more difficult to find time to fit this group into the schedule.

Availability of equipment and technical support was also a major concern. Although our university has video editing equipment available, it was difficult to find staff members to instruct us in the use of equipment. The language barrier was a problem, and procedures for borrowing cameras, scheduling editing times, etc., were not clearly defined. While each term of the project has become easier as we become more familiar with the equipment and support available and more rigorous in our scheduling, any instructor who is considering implementing this project should be very careful to allow for such contingencies in making a schedule for the project.

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Collaborative Teaching of Debate and Discussion through SCS

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Introduction

One of the major goals of English education at Japanese colleges is the development of oral communication skills applicable to practical situations in the students' future careers. Generally college students have a very strong desire to speak fluent English and their teachers spare no effort to improve their speaking skills. However, in spite of such earnest wishes on both sides, it is not an easy task to reach the goal. With little emphasis on the development of speaking and listening skills in Japanese English education at junior and senior high schools, the students lack confidence and competence in their speaking skills. The authors experienced difficulties in building student confidence in speaking English and sought an original and creative approach to motivate and enable them to improve their oral communication skills.

A network system, the Space Collaboration System (SCS), absorbed the authors' attention as a tool to improve these skills. The SCS is a satellite communications network connecting institutions across the nation. This innovative system was developed and launched in October, 1996 by the Ministry of Education's National Institute of Multimedia Education (NIME) to make distance education and research exchanges far more accessible to institutions of higher education in the multimedia society of the 21st century. As of July 2000, there are 143 stations in 120 institutions. These stations are called VSAT (Very-Small-Aperture Terminal) stations and are controlled and monitored by the HUB station installed in NIME. Each VSAT station installs cameras, screens, monitors, and other equipment, which enables the institution to exchange audiovisual information instantly and interactively with other distant institutions.

The marked characteristic of communication over the SCS is real-time interaction with clear audiovisual information. By taking advantage of this characteristic, the authors came up with a project to enable students at two different and distant universities to communicate in English in a joint class connected through the SCS. It was assumed that the students would be much more motivated to improve their speaking skills by encountering their peers. This new learning environment was also expected to bring atmosphere of competition into speaking classes.

Another characteristic of the SCS appeared helpful in contributing to increase student motivation. The SCS has an immense capacity to connect 3,000 VSAT stations and at maximum 3 stations are available for concurrent interaction. Varied interaction among multiple stations and the presence of large audiences would hopefully encourage and stimulate the students. Simplified operations using a touch panel are also characteristic of the SCS. Teachers do not have to be bothered or bewildered by the complexities of the technology.

The area of communicative speaking skills focused on in this research was debate, which was thought to be a favorable activity for the SCS joint class in terms of interaction and time limit (90 minutes). In addition, it was presumed that the debate would naturally bring a competitive atmosphere to the class.

As far as we know, there have been very few examples of the use of the SCS for communicative English classes like our project. It seems the SCS was conventionally used for one-way communication such as lectures and meetings in Japanese. Figure 1 below demonstrates our project exploring the use of the SCS.

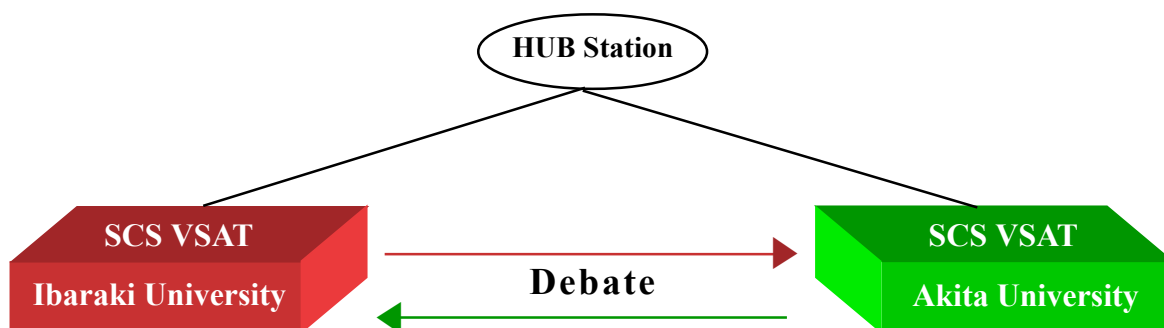


Figure 1. Interactive English communications classes

The Present Study

Purposes

The purposes of this study are to explore effective ways to use the SCS to improve oral communication skills of college students and examine its effects on them through a joint project by Ibaraki University and Akita University. More specifically, there are four purposes to be investigated in this research:

1. To explore a way to apply the advantages of SCS to interactive English communication classes.
2. To design a collaborative way of teaching for discussion and debate.
3. To improve oral communication skills by introducing persuasive and spontaneous speaking to beginning students of debate.
4. To find what benefits and stimulation will be had by students in a joint class through the SCS.

Project

Fundamental Premises: The teaching focus of this project was on the process toward final presentation, not on the fundamentals of academic debate. First and foremost, the students were guided to speak persuasively with clear organization rather than to collect data and evidence. In order not to occupy them with data and information gathering, the teachers coordinated and distributed a limited number of identical reference materials to each of the student debaters.

Table 1. Shared Reference Materials

Round	Reference Materials
1 st	Souki Eigo Kyoiku No Kanousei (Possibilities of Early English Education). (1999, August). <i>The English Teachers' Magazine</i> , 8, 8-17.
2 nd	On-Line Toronkai Houkoku : Daigaku Nyushi Ni Eigo Wa Hitsuyoka (Report on On-line Discussion: Is English Necessary for College Entrance Examinations?). (1998, January to April). <i>The English Teachers' Magazine</i> 1, 30-31; 2, 86; 3, 87; 4, 87.

Next, a simplified and flexible debate format and a set of rules were adopted to accommodate differences in individual levels of English skills, the number of participants, and teaching procedures. In particular, the rebuttal speech stage in the format below was unique to our project.

Table 2. Format and Rules

Format/Rules		Time
1.	Affirmative Constructive Speech	5 minutes
2.	Negative Constructive Speech	5 minutes
	Preparation Time	1 minute
3.	Negative's Cross Examination of the Affirmative's Speech	2 minutes
4.	Affirmative's Cross Examination of the Negative's Speech	2 minutes
	Preparation Time	5 minutes
5.	Rebuttal Speech (Unique to our project!!)	10 minutes
Rules: 1) Negative and Affirmative sides take turns. (Negative→ Affirmative→ Negative→ Affirmative→)		
	2) First respond to the previous person's rebuttal, and then offer your rebuttal	
	3) Turns should be first given to the members who have not spoken in constructive speech and cross examination.	
	4) Within 1-minute speech per person	
	5) More than 1-minute silence transfers your turn to the other team.	
	Preparation Time	1 minute
6.	Negative Concluding Speech	2 minutes
7.	Affirmative Concluding Speech	2 minutes
		Total Time: 35 minutes

The total time of one debate round was set to 35 minutes so that one joint class would have two rounds of debate in its time limit of 90 minutes.

Overall Picture: This project can be divided into 3 stages: (a) pre-SCS stage, (b) during-SCS stage, and (c) post-SCS stage; the flow of these 3 stages is presented in Figure 2.

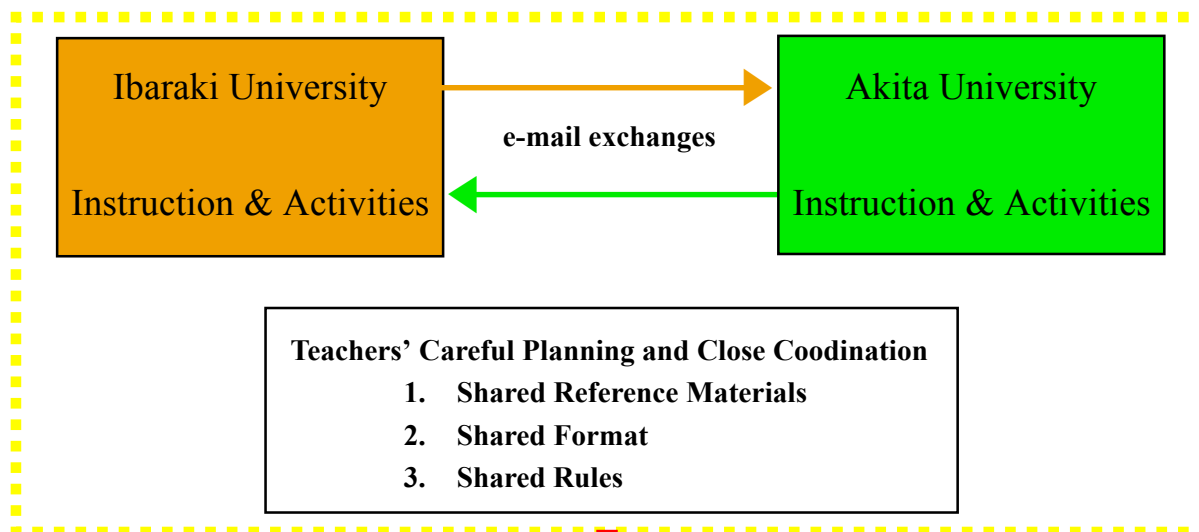
Pre-SCS: At the stage of pre-SCS, fairly frequent e-mails were exchanged between Hirano and Shiozawa at Ibaraki University and Sasaki at Akita University, through which the reference materials (Table 1), the format and rules (Table 2), and the propositions (Table 3) to be shared in the joint SCS debate were discussed and decided.

It turned out that careful planning and close coordination by teachers were essential for the success of this project.

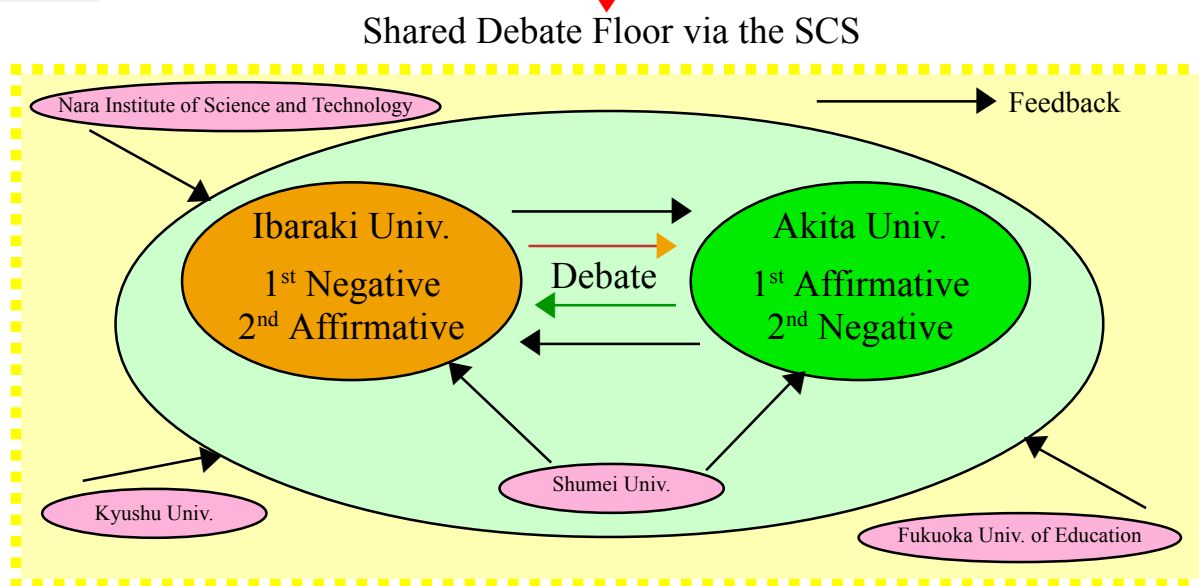
Although the basic principles of pre-SCS teaching at both universities were the same, their approaches were different. At Ibaraki University, the students had small-group discussions to come up with propositions, learned common expressions for debate, rehearsed the debate and evaluated it using the same format as the one for the coming joint SCS class. At Akita University, a model debate was presented to and analysed by the students. They

had debate-style role plays as an introduction to debating, the situations of which were set up to reflect the debate topics. As a way to follow the flow of debate, they received instruction on how to take notes. They went through the rehearsal debate with the same propositions and, finally, e-mailed to the teacher a manuscript with a few questions expected from the other team and their answers to them, which they revised after receiving the teacher's feedback.

Pre-SCS



DuringSCS



Post-SCS

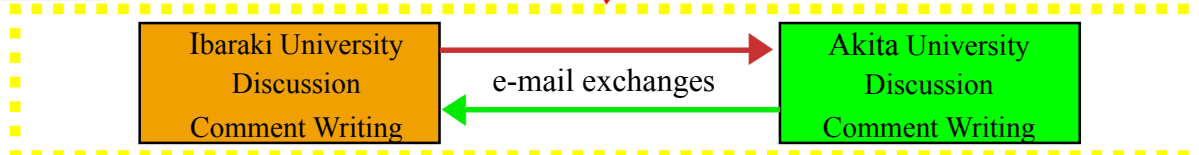


Figure 2. Schematic diagram of collaborative SCS project

Table 3. Proposition & Position

Round	Proposition	Aff.	Neg.
1 st	Primary schools should introduce English into their curriculum as a subject.	Akita	Ibaraki
2 nd	English should be excluded from college entrance examinations.	Ibaraki	Akita

During SCS: With ‘a floor created by the SCS’ shared among the students and teachers from the 6 universities, the debaters were encouraged as well as stimulated by the presence of large audiences. The choice of the two propositions also helped them be actively involved in the debate because most of them would like to become teachers of English and will face those problems in the near future. Both teams at each round consisted of 5 students and they took turns expressing their opinions, ideas, questions, or answers. During the preparation time, they discussed being more persuasive in the next stage of exchanges. This was a no-win debate. That is why the procedure did not go beyond evaluating each team’s performance by the use of an assessment/evaluation form designed by the instructor(s) at each university.

After the two rounds of debate finished, we had time to discuss the overall performance of the debaters, the procedures designed by the authors, and the significance of debating. The students exchanged their honest feelings that debating in English is difficult but worth trying. The authors reflected upon the original procedure and pointed out the points to be refined. The teachers at the other institutions gave us encouraging comments as well as constructive and convincing observations.

Post-SCS: The joint debate class was followed at each university by a discussion and then writing comments were exchanged by e-mail. At Ibaraki University, it was also discussed how meaningful this project was to the students who participated in it as part of the ‘English Education Theory’ course. At Akita University, a brief questionnaire was administered to the students about 1) what they could get from the course as a whole and 2) requests or complaints. Teachers’ comments were also exchanged for a better SCS joint project.

The Key to Success: To assure this project is successful, the following four factors should be followed.

1. Close, Active, Full Collaboration

In spite of the differences in teaching purposes, procedures and contents between the courses at two universities, the authors explored a way to realize this project by close, active, and full collaboration as well as mutual *positive* concessions.

2. Careful Planning and Coordination

Information technology enabled careful planning and coordination between distant universities. In this project, numerous e-mails were exchanged among the 3 teachers.

3. Rapport between teachers and students

Teachers and students at each university have to understand each other’s ideas or feelings to work as a team before, during, and after the project.

4. Encouraging feedback from attentive audiences

Feedback from the audiences is helpful and encouraging. After the debate, useful comments to the point were exchanged, which highly encouraged the students and teachers to try it again.



Figure 3. Significance of using SCS for interactive English communication classes

Conclusion

From the following four points we conclude that this SCS joint project is an unprecedented and effective way to develop interactive English communication classes. First, an interactive English communication class between distant universities was realized because of the advantageous characteristics of the SCS, such as real-time interactive communication, transmission of clear audiovisual information, and simplified operation. Second, collaboration between the teachers generated a simple, flexible debate format and a set of rules. Also a cooperative work spirit, based on rapport between the students and the teachers, contributed to every stage from wording propositions to speech delivery. Third, the introduction of persuasive and spontaneous speaking made the students realize that it is one of the important areas of speaking skills that they have to and want to keep developing. Last, both the students and the teachers benefited from the SCS's powerful stimulation and motivation. We suggest that this SCS joint project provides a new perspective on teaching of oral communication skills.

Implications

This research will be extended to explore more effective uses of the SCS for interactive English communication classes. To supplement and develop the SCS joint class, the Internet will be a useful follow-up tool to further exchanges of opinions and comments. With the global development of the SCS, communicative English classes would be realized with universities in foreign countries. Actually, post-pan-pacific regional telecommunications

network experiments and research were carried out by satellite between Japan and Thailand, Malaysia and Indonesia (<http://www.crl.go.jp/t/team1/POST/index.html>). The development of information technology presents us with the possibility of using it in teaching oral communication skills. It will depend on teachers' insight and creativity to use information technology to improve students' communicative speaking skills.

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Composing on Computer

—English Foreign Language Speakers Discover Hidden Treasure—

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Abstract

In this paper, based on the poster presentation I want to illustrate how an electronic mail facility offered novice writers in a freshman English second language class in Taiwan scope for free writing and composing meaningful text in a genre such as expressive writing. Two issues are highlighted – one, the writer is the fount of all text that she produces and two, language is a social construct. The writer and reader jointly construct meaning as both of them contribute background knowledge and expertise to the text. Text is coherent, has purpose and is directed at and influenced by the audience, and is produced by an author persona. When e-mail is used as a means of communication writing is in fact a kind of talking to others in a focused manner, rather than it being an individualized adversarial activity. Communication not only breaks down cultural barriers, but also increases writers' shared knowledge and creativity.

Project Participants

At the beginning of the 1999 fall semester I became a student advisor for a section of the English Major freshman class group. I did not teach all the students in my group so I had to find a way of establishing a positive relationship with the members of the group, as this was the main task assigned to each advisor. It was important that students should perceive the communication to be meaningful, consequently I thought of integrating the relationship building process with a project that would be interesting to them and at the same time help them in their study of English. All the students were intermediate to low advanced level English second language users. Their English teaching in high school had mostly been within a traditional grammar oriented paradigm.

Rationale

The project served a dual purpose: first, the rationale for launching it was to use e-mail messages as a means of establishing and developing interpersonal relationships in the group, and in that way break down cultural barriers between my students and myself by becoming engaged in an activity that was of mutual interest to us all. Secondly, the motivation was to guide students to use the computer, more specifically, the electronic mail facility as a writing tool. Novice writers would have a chance to develop their writing and composing skills in a non-threatening way. The group of English second language students had scant knowledge of the difference between a mechanistic approach to writing and composing as a meaning making activity.

Goals of the Project

For the purpose of the presentation the overriding goal of the project was to encourage students to become independent thinkers while composing an expressive text on a computer. The process approach to writing could enable them to utilize their declarative (what they knew) as well as their procedural (knowing how to) knowledge

in a creative manner. Writers would begin to realize that writing is a purposeful, meaning making activity to be carried out in phases during which the main objective is to negotiate meaning in order to produce a coherent text.

Secondly one of the goals was to make writers aware of the benefits of electronic aids and guide them to use the available facilities at their disposal to minimize the drudgery connected to the creative but time consuming cyclic writing process. Each time a draft is revised the writer renegotiates meaning in order to improve the quality of ideas, as a result changes to the text are inevitable.

Thirdly, the project aimed at guiding writers to develop their ‘self-regulating ability’ - that is to take responsibility for their own writing in three ways: to observe the content of their writing (to note what they wrote); to evaluate the quality of their writing (to note how they wrote); to react to their writing (to be willing to revise their text when necessary).

Since all members of the group were freshmen who had limited experience of writing above sentence level I regarded them as novice writers.

Traits of Novice Writers

In my experience, supported by research (Eskey, 1993; Bhatia, 1998), novice writers share some characteristics irrespective of the target language they use, for example:

Novice writers have little sense of audience (readers). They do not direct their writing at specific readers or an anticipated reader group. When the writing does not have a clear focal point it loses impact.

Coupled to this is absence of a definite purpose for writing. Inexperienced writers often do not know that they have to shift the emphasis in discourse depending on the purpose for writing, for example a different emphasis for expressive, than for persuasive writing.

Furthermore, these writers seem to have only tacit awareness of an author persona and writer’s “voice” in a text. Inexperienced writers often do not implement rhetorical devices to create suspense or vibrancy in their discourse.

Novice writers do not revise their texts as often as experienced writers do. They also do not know how to distinguish between revising and editing and are satisfied if surface errors have been eliminated.

Finally, texts written by novice writers often lack coherence, mostly because the writers lack self-regulating skills.

Throughout the project I tried to encourage and boost the morale of all participants. Not all students responded equally well, but some improved remarkably well. This positive approach to a new and perhaps daunting task already became evident at the first meeting.

Procedure

At the first group meeting I explained the idea of launching a project in which we would do a writing as-a-process project using the Internet as our communication medium. Since I did not see students regularly, communicating via e-mail seemed a viable option to make the communication easier between the various participants and myself. The project would run for the duration of the academic year.

Not one of the twenty students who volunteered to join in the project had ever used the writing-as-a-process approach before. Neither had any one used the computer as a writing tool up to that stage. Each participant would initially produce an expressive text using e-mail as their communication medium in which they described an

unpleasant experience. All members agreed to send weekly e-mail messages to my address, to which I would respond within a day or two. In addition to the communication via e-mail, the group met regularly once a fortnight for one hour during the first semester. In the latter half of the year the group met sporadically on an “at-need” basis.

During the first few class meetings I explained the cyclic nature of writing-as-a-process. First, students learnt to distinguish between the concepts writing (a technically oriented action that can be completed at a single session—generally without the need for revising the text) and composing (a meaning making writing activity - generally drafts have to be revised to improve quality and clarity of ideas). Next, they were introduced to the different phases in this approach, such as prewriting; the concept of multiple drafts needed for revising ideas; the value of teacher and peer response to writing while it was in progress; editing or polishing; and finally, publishing a text. Students also learnt about the writer’s prerogative to create any author persona of his/her choice; and to illustrate the purpose of writing discourse they were introduced to the rhetorical triangle (Kinneavy, 1971 in Connor and Carrell, 1993, p. 143).

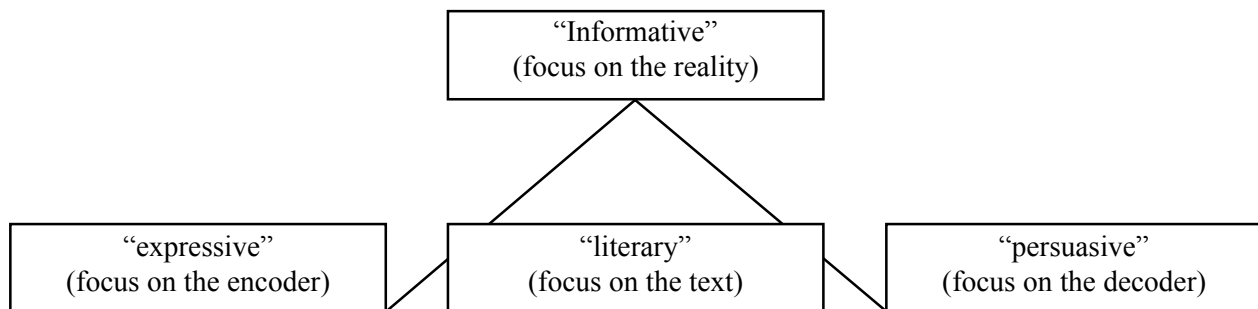


Figure 1. The purpose of writing discourse

I would act as an outside reader, responding to text in a non-directive manner. I would conference with each writer individually in my e-mail responses, using a P-Q-S- format:

P - Praise at least one good aspect in the text – either a thought or a single word.

Q - Question only one point that seemed problematic.

S - Suggest a few different options to change or improve the content.

However, the onus would always be on the writer as author to accept or reject the suggestions. At the group meetings we discussed two most prevalent problems that cropped up in the previous weeks – sometimes referring to composing matters, at other times, to logistical problems. Writers also had time to read their drafts in their response groups (5–6 members) and listen to their peers’ PQS feedback. The emphasis in all interchanges during the composing process was on improving the quality of ideas. While the writing was in progress surface language errors were corrected only in extreme and very obvious instances. Editing or polishing of drafts was kept until the final draft was done.

Pro’s and Cons of Using the Computer as a Writing Tool

Advantages

The advantages of using the computer as a ‘writing’ tool are generally known. In our situation it was convenient to write on computer for some special reasons. As far as the mechanics of writing were concerned facilities such as Thesaurus and spell checker to facilitate editing, were available to all writers, while the cutting and pasting facility lessened the drudgery of revising multiple drafts. Another advantage was that the product, even before it

was proofread was neat and legible without being disfigured by deletions or scribbles on the page. The neat appearance of a draft somehow helped those novice writers to develop a sense of ownership and pride in their own text.

At content level the computer also proved to be highly beneficial as a writing tool. As a result of writers' ability to revise by deleting or adding sections it was possible to enhance the quality of ideas while the writing was in progress. Furthermore, writers could open links to other sites enabling them to have access to a wealth of relevant sources which enriched the content of their own texts while samples of different genres could serve as models to add quality and depth of thought to their own work.

Constraints

In spite of many advantages of using the computer as a writing tool, there are certain constraints. Many language students have minimal computing skills that can slow down the writing process considerably in some cases. In freshmen classes it is not unusual that entire texts are lost because writers did not make backup copies or save the original draft. Bothersome as such issues are, they can be remedied when members become more adept at using the computer. Another matter of a psycho-socio nature is of greater concern, however. Foreign language users easily start to feel isolated from their teacher and peers when they struggle with the target language. When writers cannot cope on their own because of their insufficient language skills they may give up trying if help is not forthcoming fairly promptly. In such instances writers feel abandoned and see writing on computer as a non-interactive and impersonal task.

Advantages of Using Electronic Mail as a Communication Medium

The almost universal availability and immediacy of electronic mail were the two features that made using the web preferable to using word processing as a means of communication in the project. It would have been almost impossible to sustain the support system that was implemented if students had used a word-processor. The e-mail features referred to above also made it possible to forestall the negative psycho-socio factors that could influence writers' attempts negatively.

I came to know students much better than it would have been possible in every other situation. Cultural barriers were gradually broken down. The reticent "silent" students in class began to develop greater confidence in their writing and composing ability, and they started to communicate freely on disc as well as in face-to-face meetings. Students never felt "abandoned" and left to their own devices. They were assured of the outside reader's assistance at all times. Writers could work on or off campus at their own pace and in their own time. This gave individuals a chance to utilize their own learning style, which in turn reduced the level of student learning stress.

Nevertheless participants were aware of and had to cope with specific constraints in order to allow the project to run smoothly. They soon discovered that their work tempo was to a lesser or greater extent affected by the level of their computing and typing ability. Fortunately they could take care of most of the technical problems on their own or get assistance from someone else at a later stage. Other problems were mostly related to time management and network problems. Sometimes when the network was down or very slow students were frustrated. There were a few instances where messages were lost or bounced back to the writer's address. To overcome the problem, however, students learnt to make back-up copies of all drafts and save all outgoing messages.

Although most writers' drafts still reflected remnants of idiosyncratic inter-language systems the major goal of this part of the project—to communicate and create a text above sentence level—was achieved. The drafts below are evidence of the degree of progress that was noticeable in individual persons' writing.

Samples of Student Writings

Subject: A bad experience

Date: Tue, 9 Nov 1999 17:07:06 +0800

Two months ago, I had the worst experience with my friend. I remembered that day was Father's Day and my friend called me at night. We had a little quarrel in the telephone. The reason was he wanted to resign her part-time job. The job was I looking for her. She promised me that she would do the job until September, but she didn't do it. So I was angry with her. I am never angry with anybody, but this time I was really angry. Besides angry, I was also very sad. I think this is my worst experience in my life.

(101 words) *f8850044* Gloria

Subject: A bad experience

Date: Sun, 28 Nov 1999 22:36:52 +0800

Two months ago, a Friday night, I had a bad experience with my friend. I still remember that day was Father's day and my friend called me. We had a quarrel on the telephone. The reason was she wanted to resign her part-time job. The job was I looking for her. The thing was happened very suddenly. She promised me originally that she would finish the job, but she didn't do it. She didn't abide by her promise. So I was angry with her. I have never been angry with anybody previously. Besides angry, I was also very sad. I think this is my worst experience in my life.

(106 words) *f8850044* Gloria

Subject: A unpleasant experience

Date: Tue, 9 Nov 1999 17:28:52 +0800

In the morning of one day, I got up late and I must go to the classroom. I walked on the road and I must try my best to walk faster. When I came down the stairs in the engineering building. Suddenly I fell down, and I slid on the ground. And there were a lot of people in the place at that time. I was very embarrassed at that time. But I must go to the classroom, because I was already late. I wore my hat and tried my best to run to the classroom. *After that time I walked carefully.*

(94 words) *f8850024* May

Subject: A unpleasant experience

Date: Sun, 28 Nov 1999 21:48:38 +0800

One Friday morning, I fell down suddenly.

In Friday morning, I got up late and I must go to the classroom. I walked on the road with my classmate Grace. And we must try our best to walk faster. When I came down the stairs in the engineering building, I fell down and I slid on the ground. And Grace asked me "Were you all right, and were you hurt?" I answered her "I was all right." "And there were a lot of people in the place at that time. I was very embarrassed at that time. But I still stood up quickly. I wore my hat and tried my best to run to the classroom. After that time, I walk carefully. And I get a experience."

(144 words) *f8850024* May

Subject: A unpleasant experience

Date: Mon, 20 Dec 1999 23:24:24 +0800

One Friday morning, I fell down suddenly.

In Friday morning, the sky was very murky grey and it seemed to tell me something will happen. The weather was very cold and the wind was very chilly. I feared the cold weather and I wanted to sleep more. So, I got up late. I worried about that I would be late, so I accelerated my step. I walked on the road with my classmate Grace. And we must try our best to walk faster.

When I came down the stairs in the engineering building, I forgot there was still a stair and I didn't take care of it. So, I fell down and I slid on the ground. And Grace asked me "Were you all right, and were you hurt?" I answered her "I was all right, just some abrasion. Don't worry about it!" And there were a lot of people in the place at that time. I was very embarrassed at that time.

And I felt everyone was laughing at me. At that time, I hope there was a hole in the ground and I could go into it. But I still stood up quickly. I wore my hat because I was scared that others knew me. And I tried my best to run to the classroom.

After that time, I walk carefully. And I get a experience.

(202 words) *f8850024 May*

*Note: Writing samples had not been edited as the final drafts still had to follow.

Tentative Evaluation of the Project: Composing on Computer

At the onset of the project I identified two major purposes for the project, first to establish a positive relationship between myself and the students in the group, and secondly, to guide them in a non-directive way to make the transition from writing to composing on the web, using e-mail as the means of communication. Although the first goal of the project does not form an expressed part of this project, it is interesting to note that in varying degrees all students in the group established a very pleasant and trusting relationship with me.

I identified three categories within a qualitative evaluation paradigm as a tentative base to establish if there had been development in the quality of individual writers' texts. These were:

1. The increase in number of words in drafts;
2. The increase in use of number of descriptive words: adjectives and adverbs in second and third drafts;
3. Evidence of some rhetorical devices such as writer's 'voice' and a sense of personal involvement – a focus on the encoder - in the drafts.

Both writers' samples reflected some evidence of development in all three categories

Table 1. Summary of Various Writer Characteristics

Writer:	1st draft	2nd draft	3rd draft	Writer	1st draft	2nd draft	3rd draft
Gloria				May			
Number of words	101	106	-		94	144	202
Number of qualifiers	6	13	-		13	13	22
Rhetorical devices:	yes	yes	-		yes	yes	yes

Since the goal of the project was to help student writers make the transition from writing to composing I briefly refer to some of the rhetorical devices used in various drafts. In Gloria's case she succeeded in sharing her anger about her friend's disloyalty, as well as her awareness of an unusual personal emotion—anger. The text is anchored in space and time—at home, “father's day, Friday.” In spite of many surface errors the writer's ‘voice’ is noticeable. It is expressive writing as the focus is on the encoder's feelings.

May's drafts not only doubled in length, but she succeeded in creating a sense of “nature in sympathy with the persona.” Her description of the weather in the 3rd draft is vivid and creates a foreboding atmosphere. The use of dialogue is effective as it draws the reader into the situation. The milieu is briefly sketched. Readers know when and where the incident took place and how the writer felt about it.

Most students progressed along similar lines. The development in the consecutive drafts is noteworthy as my input was confined to the PQS strategy. I merely suggested changes and asked questions to raise their awareness of the context, e.g., where were you? Were you alone? How did you feel? Students reacted to my suggestions according to their individual inclination and ability.

It is understandable that individuals' writing products showed great variation in quality. The level of language usage of writers who were proficient in English was more advanced than in instances where the writers had difficulty formulating their ideas in the target language. However, Gloria and May's texts can be regarded as typical of the language ability of the majority of the group members. Fifteen of the original group of twenty members participated for at least the first semester. At that stage most of the students had written the final drafts.

There are some points that need to be emphasized and revised in a subsequent project, such as saving all my individual responses to students. Nevertheless, I consider the project to have been a success. English second language students learnt something about composing on computer and discovered their own creative ability as writers in the process.

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Computer Assisted Language Learning (CALL)

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Abstract

In recent years computer assisted language learning has attracted both the attention and criticism of many language teachers. The computer revolution, is believed to be more than just a technological development and may change society as radically as did the Industrial Revolution (Ahmad, Corbett, Rogers and Sussex, 1985). Consequently, computer literacy and utilizing the computer in teaching language has established itself as an important feature of language teaching profession in modern education. That is why many language schools, and language departments now utilize computers in various ways.

The aim of this paper is thus twofold: The paper first starts with a discussion of various aspects of computer assisted language learning (CALL), with a particular reference to the role of computer in learning language. The advantages and disadvantages of computers are then presented. Finally a brief summary of what teachers should know in order to use CALL concludes the paper.

Introduction

Recent years have witnessed an explosion of interest in using computers for teaching and learning. A couple of years ago, the use of computers in language teaching and learning was of the concern only to a small number of language teachers who were familiar with computers. But nowadays, with the technological development and with the advent of multimedia computing means, such as the E-mail, and Internet, the role of computers in language instruction has become an important issue for language teachers throughout the world. Indeed technological developments have been welcomed with open arms by all sections of society such as banking, traffic, word-processing, computer games, students registration, office management, and 21st century language teachers and language learning are no exception to this issue. (Levy, 1999; Nunan, 1999; Vanparys, 1999; Whistle, 1999; Warschauer and Healey, 1998; Kalisky, 1992; Roach, 1992; Gitsaki, 1999; Kubota, 1999).

According to Silars (1994) one of the most obvious effects of the revolution in information technology, of which computer is only one means, is that it allows many tasks to be performed much more quickly and with great accuracy, cutting the costs and reducing the risk of errors; it enables personal letters to be produced simply; it can reduce the need for travel from one place to another place and all these save much time and money.

As Ahmad, Corbett, Rogers and Sussex (1985) claim the computer revolution can be considered more than just a technological development and it may change society as radically as did the Industrial Revolution. It is also claimed that Computer Assisted Language Learning and Teaching approach in language classes represents new ways of language teaching and learning which have a great impact on the learning of foreign language and consequently creates an ideal condition and environment which will facilitate learning (Hoven, 1999; Harrison, 1998; Holmes, 1998).

The History of CALL

Warschauer and Healey (1998) report that computers have been utilized in language teaching since 1960s. They then divide these longer years into three main stages:

1. Behavioristic CALL
2. Communicative CALL
3. Integrative CALL

Behavioristic CALL

Conceived in the 1950s and implemented in the 1960s and 1970s, this could be considered a sub-component of the broader field of computer-assisted instruction. This mode of CALL featured repetitive language drills, referred to as drill-and-practice. In this paradigm which is popular in the United States, the computer was regarded as a mechanical tutor which never grew tired or judgmental and allowed students to work at an individual pace. Behavioristic CALL was first designed and implemented in the era of the mainframe, but eventually modified and implemented to the personal computer. According to Ahmad, Corbett, Rogers and Sussex (1985) PLATO was the best system which ran on its own special hardware consisting of a central computer and terminals and featured extensive drills, grammatical explanations, and translation tests at various intervals.

Communicative CALL

This emerged in the late 1970s and early 1980s when behavioristic approaches to language teaching were being rejected at both the theoretical and pedagogic level, and when new personal computers were creating greater possibilities for individual work. Proponents of communicative CALL stressed that computer-based activities should focus more on using form than on the forms themselves, teach grammar implicitly rather than explicitly, allow and encourage students to generate original utterances rather than just manipulate prefabricated language and use the target language predominantly or even exclusively (Jones & Fortescue, 1987; Phillips, 1987; Underwood, 1984). Warschauer and Healey also argue that communicative CALL corresponded to cognitive theories which emphasized that learning was a process of discovery, expression, and development. Popular CALL software which was developed in this period included text reconstruction programs (which allowed students working alone or in groups to rearrange words and texts to discover patterns of language and meaning) and stimulation (which stimulated discussion and discovery among students working in pairs or groups). Many of the proponents of the communicative CALL did not focus on what students did with the machine, but rather what they did with each other while working at the computer.

Though communicative CALL was considered as an advance over behavioristic CALL, it came under criticism too. By the late 1980s and early 1990s, critics discussed that the computer was still being used in an *ad hoc* and disconnected fashion and thus 'finds itself making a greater contribution marginal rather than central elements' of language learning process (Kenning & Kenning, 1990: 90). Warschauer (1996b) reports that many teachers were moving away from a cognitive view of communicative teaching to a more social or socio-cognitive view, which placed greater emphasis on language use in authentic social context. Warschauer then adds that task-based, project, and content-based approaches all sought to integrate learners in authentic environment, and also to integrate the various skills of language learning and use which led to a new perspective on technology and language learning which has been termed integrative CALL.

Integrative CALL

This perspective which seeks both to integrate various skills (e.g. listening, speaking, reading, and writing) and also integrate technology more fully into the language learning process. In integrative approaches, students learn to use a variety of technological tools as an ongoing process of language learning to use, rather than visiting the computer lab on a once a week basis isolated exercises (whether the exercises are behavioristic or communicative).

While the mainframe was the technology of behavioristic CALL, and the PC the technology of communicative CALL, the multimedia networked computer is the technology of integrative CALL. The multimedia networked computer is now available for almost majority of the students in the developed countries and provide possibilities for more integrated uses of technology as learning to read, write, and communicate via computer which has become an essential feature of modern life in the third millennium in the developed world.

It is obvious that many of the changes in CALL paradigms have resulted from economic and social changes. As Warschauer and Healey (1998) maintain, the shift to global information-based economies has meant a dramatic increase in the need to deal with large amount of information and to communicate across language and cultures. Consequently, teachers' roles have also changed with times and teachers are not the only sources of language information in the age of information. Warschauer and Healey also believe that as a result of the recent rapid political, social, and educational changes in the world, the teacher has become a facilitator of learning rather than the font of wisdom, and will find, select, and offer information in a variety of ways on the basis of what the students must learn in order to meet diverse needs in this changing world.

The Advantages of the Utilization of Computer in Language Learning

Ahmad et al. (1985) divide the advantages of computer into three types:

1. Those which are part of its inherent nature
2. Those which benefit the teacher
3. Those which benefit the learner.

They explain that the computer can offer interactive learning which means that like a two-way task, it can conduct a two-way learning session with students which will improve the students' performance in language acquisition. It is indeed more than a mere programmed textbook. The computer can assess the student's response. It can give messages, check the student's subsequent responses to the questions, give positive and negative scores to correct and wrong answers and finally corrects the errors made by the student and then gives the appropriate feedback. All of these activities can be repeated easily and without mistakes by the computer which can easily arise from repetition by human beings. We often witness that due to the illness, timetable clashes or other family and personal problems, students are absent from classes and cannot attend the course and accordingly miss the lessons and related points covered in the class. These kind of problems present no difficulty for the computer and consequently for CALL programs. The reason is clear, if a computer is available, the student can later use the computer and spend as long as he/she wants to get full benefit from the call program. It can also accommodate different speeds of learning and alternatively time limits can be allocated for answering questions. This is specifically helpful and valuable for testing purposes.

From the teacher's point of view, the computer offers a lot of help. The big help is its versatility in handling different kinds of material in short time. But the simplest is the one-way presentation of information in different forms such as tables, graphics, audio and video and text. The computer can also present games, questions and answers, dialogues and many different activities and exercises which will certainly facilitate learning and create a favorable condition for teaching and learning purposes too.

The computer also offers many advantages and help for students. The first one is accessibility. If computers are available, students can work with them as long as they desire. As a result of the computer's flexibility of time students thus can get most of the benefit from their time. This factor makes most of the courses accessible to students who would otherwise miss the classes. Distance teaching is nowadays practicable by the utilization of the computer. This also makes the courses available on a distance mode for part-time students too. Recently technological developments have made it possible to link the computer by telephone line (modem) to other Web cites which has consequently made it feasible for the users to use the E-mail and Internet which is of great and crucial

help for language leaning. Graduate and postgraduate students now can benefit more from computer too. They can get in touch with their supervisors and communicate with them whenever they want, even after office hours and get feedback on their assignments and thesis from their supervisors. Holt (1992: xi) states that “the effect of using computer based tools is not confined to individuals or even small groups but is likely to have far reaching implications in breaking down traditional language barriers between cultures.”

Finally “computer can be a powerful motivating force.” (Ahmad et al. 1985:6). As Kaliski (1992) points out, the computer has a positive and key role in productive language instruction provided that its possibilities and limitations are recognized. However CALL deserves a special and serious consideration and attention.

The Disadvantages of the Computer in Language Learning

The fact that CALL was once viewed with a certain hostility by language teachers goes beyond mere objections to methodological considerations. One problem is that early CALL was designed to be used for self study and most of the input was designed by people other than language teachers, in particular psychologists and computer industry itself. As a result one of the fears within the teaching profession at that time was that the computer would alter the nature of student/teacher relationship. Most of teacher also thought that they might be replaced by the computers too!

Referring to the above mentioned problems, Kaliski (1992) points out that there are a number of reasons for the under-utilization of computers in language teaching. While the young generations are often computer literate, older members of society express a certain reluctance to use the computer and remain unaware of its potential and advantages in language learning. Kaliski also refers to an association in the early days of CALL with behaviorist language learning theory, based on rote learning and drilling of language items, known to language teachers as ‘drill and kill’ has given CALL a bad image. On the other hand language teaching has now moved into a ‘cognitive’, ‘communicative’ phase, leading some learners and teachers to think that CALL has nothing new to offer to its users. Another reason might be the poorly produced software or the cost of the software which most of the users cannot afford to buy. While much CALL software may still be in the Iron Age, in Kaliski’s terms, in pedagogical purposes, there are suggestions of new roles for CALL. Leech and Candlin (1986: XI) also criticize this software problem that “CALL is still in an experimental stage, when the potentiality of medium is still being explored, and software (particularly good software) is in short supply.” However different ways of utilizing the computer and reassessing its role, new ideas about programming and technological developments are beginning to open up new possibilities.

Conclusion

The role of computers in language teaching has changed significantly in the last 30 years. We have come a long way. There is still a long way a head to go. In the past, utilization of computers were limited to text and only simple simulations and exercises, primarily gap-filling tasks and multiple choice drills were used. Technological and pedagogical developments now allow us to more fully integrate computer technology into the language learning process. Multimedia programs, such as speech-recognition software, concordance software and moreover Internet provide us opportunities and create an ideal environment to communicate in the target language and accordingly facilitate learning a foreign language in an ESL situation in general, and for EFL situation in particular.

As Warschauer and Healey (1998) predicts, more developments in networked communication, multimedia and artificial intelligence will certainly create a potentially crucial role for the computer for language exploration and use in the second language classroom. Meanwhile as our focus of attention shifts from the computer itself to the natural integration of computers in the language learning process, it will be realized that computer technology has taken its rightful place as an important element of language learning and teaching. However it is necessary to evaluate both the present position and future possibilities, the achievement of CALL which depends on software

and hardware availability and also on the orientation of computer-assisted curriculum. By this careful evaluation, the shortcoming and limitations would be recognized and necessary steps would be taken to cure the remedies and strengthen the positive points and further practical and valuable suggestions will be offered for the betterment of the CALL in the future. But one thing should not be forgotten that, the computer is put to the service of our fundamental aims in learning and teaching purposes, rather than making users slaves to its own procedures.

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Computer-Aided Prosody Training for Perception of English Syllables

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Abstract

This paper discusses why syllables are important in the perception of the rhythm of spoken English and how to improve Japanese listeners' perception of syllables. Japanese listeners were auditorily presented English words and asked to indicate the number of syllables in each word by clicking the appropriate number on the program window of the computer screen. Syllable structure (number of consonants, vowel length, and voicing of final consonants) affected Japanese listeners' ability to count syllables correctly. However, approximately two hours of training with feedback improved Japanese listeners' ability to count syllables from less than 50% correctly (before training) to over 80% (after training)-- except for syllables with 3 initial consonants which were only counted correctly 65% after training. The results are discussed within the framework of a syllable pulse model of rhythm.

Introduction

The global village we currently live in is for the most part an English-speaking one. Japan is part of this global village, and continues to play a very active and important role. As such, English, both written and spoken, is a skill that is *de rigueur* at this point in time. The focus of this paper is on how to improve perception of spoken English by Japanese speakers.

This paper discusses (1) why syllables are important in the perception of spoken English and (2) how to improve Japanese listeners' perception of syllables. The first part suggests that the primary building block of spoken language is its rhythmical structure and as such, the syllable is very important. The second part reports on a simple training experiment that led to substantial improvement in Japanese listeners' perception of spoken English syllables.

Rhythmical Structure of Language

This part discusses how rhythmical structure provides the underpinnings of spoken language and the importance of the rhythmical unit. Fig. 1 shows a symbolic portrayal of the "rhythmical structure" of a spoken utterance, which is based on recent developments in phonological theory, specifically, the C/D Model proposed by Osamu Fujimura (1999, 2000). Fujimura's articulatory model of phonetic implementation in its simplest form proposes that each syllable in a spoken utterance can be represented by a syllable pulse. The syllable pulses vary in height (magnitude) and placement (timing) according to the rhythm or stress pattern of the utterance.



Figure 1. Symbolic portrayal of rhythmical structure of language

In Figure 1, we can think of rhythm as the arrangement of syllable pulses, something like poles placed in time along the highway of the spoken utterance. In this figure, we see a “highway” of the continuous acoustic signal of a spoken utterance marked with sections of increased amplitude, roughly corresponding to syllable units. Above each section of increased amplitude is drawn a “pole” to represent approximately the point in time when the syllable is felt to occur. In this sense, an utterance is represented as a series of poles along the acoustic “highway” of speech. Both the placement of the poles and the size and structure of the pole-units vary from language to language. It is this information about poles (rhythm) which must be learned in order to master a spoken language. The consonant and vowel characteristics of the specific language of course are also necessary to learn, and are affected to some extent by the magnitude and placement of the poles (see Fujimura, 1999; 2000). The consonants and vowels might be thought of as phonetic characteristics of the language draped around the “rhythm” poles. It is the rhythm pole units lining the spoken highway of speech that this paper focuses on.

What are the units of rhythm, *i.e.*, the poles? In Japanese, one may think of the pole-units as mora-like units. Japanese poetry has mora-counting rules. A Haiku poem in Japanese consists of three lines with 5-7-5 moras each. Each mora unit gets approximately the same duration, especially at the word level. (In longer utterances under certain circumstances of change in strong focus, the duration changes, see for instance, Maekawa, 1997). Whether the units of rhythm are actually mora-units or highly constrained syllable units is not addressed here, but see, for instance, Kubozono (1989); Fujimura (in press); Otake *et al.* (1993). In this paper, in order to emphasize what we believe are important differences between Japanese and English rhythm, we will refer to mora-like-units as the “pole” units of Japanese spoken language.

The highway of the rhythmical structure of the spoken word in Japanese may look like a series of mora-like poles, all about the same height and placed at roughly equal intervals apart. This is shown in Figure 2. The utterance here consists of the words of the song about a frog, *kaeru no uta ga*. Notice that the structure of the unit associated with each pole is fairly simple in this utterance: an optional Consonant (C) + Vowel (V).

ka	e	ru	no	u	ta	ga
CV	V	CV	CV	V	CV	CV

Figure 2. Symbolic portrayal of Japanese rhythmical structure

hear	the	live	ly	song	of	the	frog	in	yon	der	pond
CVC	CV	CVC	CV	CVCC	VC	CV	CCVC	VC	CVC	CVC	CVCC

Figure 3. Symbolic portrayal of English rhythmical structure

In English, the pole-units are syllables, shown in Figure 3. Notice that the heights of the poles change as a function of the amount of stress of the syllable. For instance, in the sentence, *Hear the lively song of the frog in yonder pond*, the pole units have different heights to represent the different amounts of stress for each syllable. The pole heights and spacing are shown here as relative units. The exact height and placement of syllable pulses (as well as the size and placement of phrase pulses to indicate phrase boundaries) can be calculated using computational algorithms, currently being developed by Fujimura. The phrase pulses are not shown in these figures. See Fujimura *et al.* (1998), and Mitchell *et al.* (2000) for a discussion of the computational algorithm for computing magnitude and timing of syllable and phrase pulses.¹

Notice also that the pole units in English consist of rather complex syllables, especially compared to those in Japanese pole-units. In English, pole units permit multiple initial and final consonants *e.g.*, CCCVCCCC as in *strengths* [see *e.g.*, Tajima *et al.*, 1999, and Fujimura, 1996, for a more complete discussion]. In Japanese the pole units are mora-like, or at least, highly constrained syllables, which have the following structure: a short (one mora) syllable, with an optional initial consonant followed by a vowel, or a long (two mora) syllable, with an optional initial consonant, plus a vowel, followed optionally by an additional vowel or a consonant. The second consonant must be a nasal consonant (N) or the first part of a geminate consonant.²

Figure 4 shows the sentence *That's wonderful* with 4 pole units. Figure 4 (left) shows the poles drawn the same size whereas Figure 4 (right) shows varying heights and timing of the poles to reflect the different stresses on the syllables when the utterance is spoken. The pole unit for *won* is the tallest to indicate the fact that *won* is the syllable with nuclear stress, and *der* is shortest, to show it is reduced following nuclear stress or emphasis (see Erickson, 1998a,b and Erickson and Fujimura, 1996 for a discussion of reduction of syllable pulse height after emphasis.) Notice very importantly that since the space between each pole changes as a function of the height of the pole, the duration of each syllable changes also (see Fujimura *et al.*, 1998; Mitchell *et al.*, 2000). In other words, the duration of each syllable changes as a function of the height of the poles, as a function of the amount of stress assigned to each pole.



Figure 4. Symbolic portrayal of English rhythmical structure

A frequent occurrence with Japanese loanwords, *i.e.*, words that have been introduced into the Japanese language from English, seems to be that the English pole units (complex syllables with changing levels of stress) are transformed into Japanese pole units (mora-like units). For instance, the mono-syllabic English word, *stress*, may become 4 Japanese “pole units” *su.to.re.su*.

Notice how the rhythm changes, from one large pole unit in English for the mono-syllabic word *stress* to four pole units of equal size for the four mora-like units in Japanese. The suggestion here is that the reason this happens may be because the structure itself of the pole-units varies between Japanese and English.

1. Note that Fujimura’s model for Japanese is also based on syllable pulses rather than mora as the stress unit as in English. However, for bimoraic syllables of Japanese, his syllable duration is extended for the time interval assigned to the coda, and therefore, roughly, a pair of moraic poles corresponds to his syllable pulse when the syllable is a long syllable (*i.e.*, long vowel or diphthong or added *hatsuon* and *sokuon*.) For a description of how syllable durations are modified by moraic increments for the syllable coda, see Fujimura and Williams (1999). In this treatment, the mora is used as a temporal concept but not as the stress pattern unit.

2. Occasionally, 3-mora syllables may be thought to be permitted in which both an additional vowel and syllabic nasal occur.

In summary, Japanese rhythm is as shown in Fig. 2: Each pole unit is roughly the same height and equidistant. English rhythm is as shown in Figure 3: The pole units are different heights and spaced at non-equal distances to represent the fact that some syllables have more stress than other syllables.

The pole units (their magnitude and placement) of a language are what constitute the basic rhythmical structure of a language. The structure of the pole units can also vary, and the structure of the poles of one language can influence the perception and production of the pole units of the other language, as happens when English words are introduced into Japanese as loanwords.

Wrong rhythm is a negative factor in good comprehension of spoken language (*e.g.*, Tajima *et al.*, 1997). Anecdotally speaking, when my teen-age children were attending school in Japan, they were asked to eat at *ma•ku•do•na•ru•do* but they did not know what this was and were very frustrated, especially when their friends told them that it was *English*. In this case the 3-syllable word, *MacDonalds*, had been transformed into a 6-syllable Japanese loanword, making understanding very difficult for them as monolingual English speakers.

A general hypothesis, then, is that Japanese listeners have difficulty perceiving (and producing) English in terms of its basic rhythm-bearing units, *i.e.*, (complex) syllables. This impedes Japanese listeners' abilities in English (as well as impedes English speaking listeners in understanding spoken English by many Japanese).

How to Improve Perception of Syllables

In order to ascertain whether there is a problem with perception of English syllables by Japanese listeners, we used a simple technique of asking Japanese listeners to count syllables in English words. An earlier experiment by Erickson *et al.* (1999) showed that Japanese listeners have difficulty correctly counting syllables in English words. Fifteen Japanese listeners and five English listeners counted syllables in 275 English words that varied from 1-6 syllables in length. The syllable-counting accuracy was 98% for the English listeners and 57% for the Japanese listeners. Accuracy was lower for longer words, 1-syllable words had lower accuracy than 2-syllable words, and words having more initial or final consonants, or "longer" vowels had lower accuracy. The results indicated that English syllable structure seemed to affect Japanese listeners ability to count syllables correctly.

Based on results of this study, we asked the following questions: (1) How does syllable structure affect syllable counting? and (2) can perception of syllables be improved with feedback training?

We ran a syllable-counting experiment with 100 English words: 52 real English words, (1-5 syllables, *e.g.*, *splash*, *adapt*, *strategies*, *capacity*) and 48 pseudo-words (1-2 syllables). Pseudo-words were used in order to control the syllable structure and also to avoid effects from familiarity with real words that had become part of the Japanese loanword vocabulary. The one syllable pseudo-words were (C)(C)(C)V(V)(C)(C) words, where the onset could contain 0, 1 or 3 consonants (/0/, /p/, /spl/), the nucleus could have a short or long vowel (/e/, /ei/), and the offset, 0, 1 or 2 consonants (/0/, /p/, /ps/, /bz/). Syllables ending in two consonants could be either voiced or voiceless. The two syllable words were similar, but with /ed/ inserted after the first consonant (either /0/, /p/ or /spl/) and word stress on the second syllable. That is, /{0,p,spl} + {0,ed} + {e, ei} + {0,p,ps, bz}/. For instance, /p+ed+ei+p/, or /spl+ed+e+/ or /+ed+e+bz/, *etc.*

Each word was read by four native American/Canadian English speakers (2 males, 2 females). Twenty-three Japanese university students (14 males, 9 females, aged 18-22 years, mean = 19.5), and 12 American university students (2 males, 10 females, aged 18-28 years, mean = 20) participated in the experiment. The Japanese students were paid for their participation; the American students received course credits. The experiment involved (1) a familiarization test, (2) a (pre-)test session, (3) a training session, and (4) a post-test session. The total test time for the American subjects, who only did (1) the familiarization test and (2) the test, was approximately 30 minutes; for the Japanese subjects, who also took (3) and (4), it was approximately 2 hours. Each subject did all tests at one sitting.

The listeners took the tests individually sitting at a computer console. Each word was presented through headphones. The listeners were instructed to count the syllables and to click the appropriate number on the program window of the computer screen. The American listeners were simply told to count the syllables in the words they heard. The Japanese listeners were additionally instructed that there are ‘units’ in speech, and that in Japanese each *hiragana* (a phonotactic character) generally is counted as a speech unit. For instance, the word *hiragana* has four units (hi.ra.ga.na.). In English, a syllable generally has one vowel, optionally surrounded by consonants. For example, *papa* has two syllables, and *pin* has one syllable, not two.

The familiarization test consisted of 10 trials with feedback, where the listener could re-do his response by pushing the replay button if the response were incorrect.

The (pre-)test session consisted of the 100 words, spoken by each of the four English speakers, for a total of 400 words. A replay button was available if the listeners needed to listen again, but using it frequently was discouraged. The training session consisted of trials with feedback, 40 trained words, spoken by three English speakers. For 14 listeners, there were 240 trials. For the remaining 9 listeners, there were 480 trials, in order to examine if further training led to further improvement. The post-test session consisted of 100 words (40 words that they had been trained with, plus 60 words they had not been trained with) as spoken by two speakers (one speaker they had been trained with, and one they had not been trained with.) (See Tajima *et al.*, 1999; 2000; and Yamada *et al.*, 1999) for a more detailed description of the procedure.)

In analyzing the results, two of the 12 American English (AE) listeners were excluded because one listener had poor test-taking compliance, and the other showed a word/pseudo-word response at 88% vs. 46% (clearly different from the other AE listeners of 95.9% vs. 96.1%). The results of the experiment indicated that the AE listeners (N=10) counted syllables correctly 96% of the time, whereas Japanese (J) listeners (N=24) counted 48% before training and 81% after training. There were no systematic differences among the 4 speakers in listener’s performance.

These results indicated that training helps Japanese listeners perceive syllables. Moreover, a small amount of training, about two hours, dramatically improves the syllable-counting scores of Japanese listeners, and this affect carries over to syllables and speakers the listeners were not trained with.

With regard to whether syllable structure affects perception of syllables, the answer is that it does, but training can help overcome these effects. The exception is for the effect of three initial consonants, which remains strong even after training. These results are shown in Figures 5, 6, 7 and 8. Figure 5 shows the effect of short or long vowel on the perception of syllables. Before training, Japanese listeners were able to correctly count 58% of syllables with short vowels but only 45% of those with long vowels. After training, the percent correctly counted was 83% and 79%, respectively, which compares more favorably with the English listeners who counted 97% and 96% correctly.

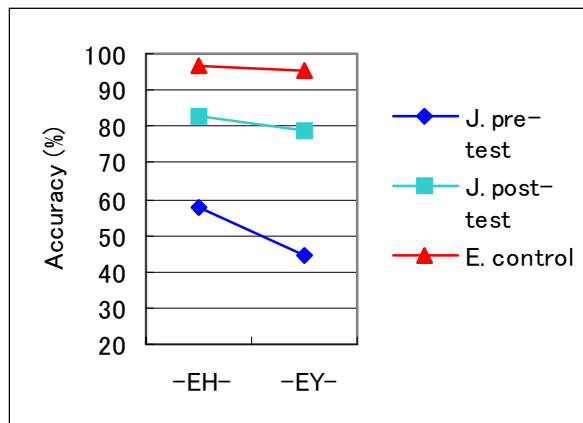


Figure 5. Effect of vowel

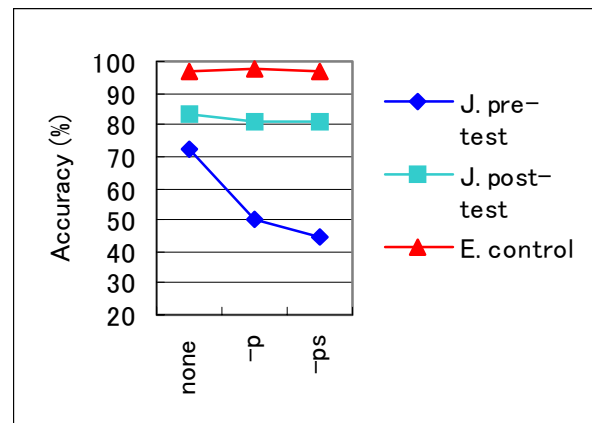


Figure 6. Effect of final consonant(s)

Figure 6 shows the effect of number of final consonants on syllable counting. Pre-test scores for Japanese listeners showed that syllables with no final consonants were correctly counted at 72%, but the percentage fell for syllables with one final consonant (50%) and two final consonants (45%). After training, the percentages rose to above 80%, for all syllables, regardless of number of final consonants. These results approach the 97% accuracy of the English listeners. Figure 7 shows the effect of voicing of the final consonant cluster. Before training, syllables ending in voiced consonants were more difficult to count correctly (38%) than those ending in voiceless consonants (45%); however, training brought up the performance to 81% and 77%, respectively, and the difference in counting accuracy of syllables ending in voiced vs. voiceless consonants for Japanese speakers seems to approach that seen for English speakers, at 97% and 94%, respectively.

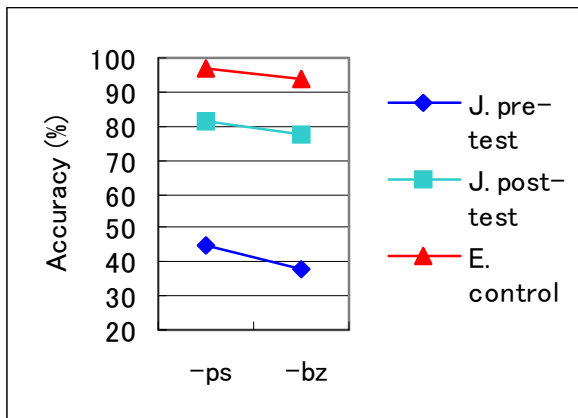


Figure 7. Effect of voicing of final constants

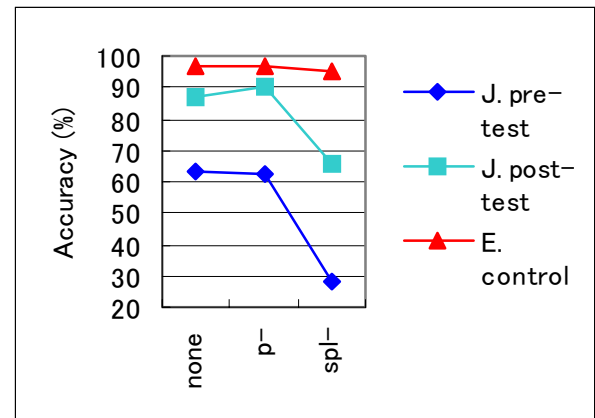


Figure 8. Effect of initial consonant(s)

Figure 8 shows the effect of initial consonants on the perception of syllables. Before training there is a large effect: syllables beginning with 0 or one initial consonant are perceived with a 63% accuracy, whereas syllables with three initial consonants, at 28% accuracy. Training improves perception of syllables beginning with initial consonants: 0 and 1 initial consonant syllables are perceived at 87% and 90% respectively, approaching the average 96% accuracy rate of English listeners. However, syllables beginning with 3 consonants, although showing some improvement, show a much lower accuracy rate, 65%. This suggests that syllables beginning with three consonants present special difficulty for Japanese listeners.

To test for statistical significance, analyses of variance (ANOVA) were conducted on the arcsine-transformed values of the percent-correct identification scores in Figures 5-8. Separate analyses were run for the four factors and for the pre-test and post-test scores. In the pre-test, all four factors were found to have a significant effect on Japanese listeners' accuracy ($p < .001$ for number of initial consonants, number of final consonants, and vowel type; $p < .01$ for final cluster voicing). In the post-test, only the number of initial consonants had a significant effect on accuracy ($p < .001$). Other factors did not reach significance.

In summary, for English listeners accuracy is high regardless of syllable structure. For Japanese listeners, syllable structure affects accuracy. The more initial or final consonants there are, or the longer the vowel, the lower the accuracy; also, voiced final clusters are more difficult than voiceless ones.

The study shows that a small amount of training improves Japanese listeners ability to count syllables. Post-test performance approaches native scores except for stimuli with 3 initial consonants. One reason for this might be that 3-initial consonants constitute a "bigger" violation of Japanese syllable structure than 2 final consonants. Future work will investigate whether perception of syllables with 3 initial C's will improve with more training.

When Japanese listeners' performance in the syllable-counting task is interpreted in terms of the syllable pulse model described in Part I, it can be speculated that the listeners assign the wrong number of pulses to the English stimuli. Instead of assigning a single "big" pulse to a complex English syllable, Japanese listeners tend to

assign several smaller pulses, with each pulse associated with simple mora-like structures. Syllables with three initial consonants may be particularly difficult for Japanese listeners to hear as a single “big” pulse.

In order to better assess to what extent being able to perceive English rhythmical units aids in perception and comprehension of spoken English, we will expand this work to counting the number of stressed syllables in a sentence for comparison with listening comprehension tests.

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Computerized Vocabulary Levels Test as a Placement Tool for EFL Learners

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Abstract

In order to provide an English course tailored to the needs of individual learners, some universities in Taiwan, (e.g., Tung-Hai University), have begun to use placement tests to assign students to classes of an appropriate level. However, due to the cost and difficulties of administering paper-and-pencil placement tests for large numbers of college students, many universities still place students with different proficiency levels in the same class. Therefore, some students would find learning materials too advanced but others find the materials too elementary. To overcome these problems, an accurate but more cost-effective placement test for assessing college students' English proficiency level is clearly needed. Based on empirical research that English speakers with a large vocabulary perform better on a wider range of linguistic indicators than speakers with a more limited vocabulary (cf. Anderson & Freebody, 1981; Laufer, 1988), Meara and Jones (1988) proposed that a well-designed vocabulary levels test can be used as a language placement test. In order to provide an accurate and efficient placement test on Taiwanese students' proficiency levels, in this study we converted the well-known Vocabulary Levels Test by Paul Nation into a computerized placement test. The authoring tools and content of the computerized vocabulary levels test are introduced first. Then, the steps of using the test are illustrated. Last, the limitations and potentials of adopting computerized placement tests are discussed. It is expected that the project report will be useful to both language program administrators and language teachers.

The Need for Language Placement Tests

As English becomes more and more important in today's world, universities worldwide have been working hard on improving the qualities of their English education. In Taiwan, large class size with mixed levels of learners has been a well-known problem for improving the quality of English teaching at the college level. For a large class with 50 or 60 students, it is difficult for teachers to pay attention to individual students. For a class with mixed levels of learners, teachers have difficulties in providing suitable learning materials and in creating an optimal learning environment. Students with higher proficiency level find the learning materials too elementary and they cannot learn much from the English course. Students with lower proficiency levels find the learning content too advanced and they cannot catch up with their course schedule.

Some Taiwanese universities were quite responsive to these difficulties. Tung-Hai University, for instance, had reduced the class size to between 30 to 35 students and made great efforts to assign students to three different proficiency levels (low, mid, and high) by using English language placement tests. Students therefore are much more likely to be assigned to classes of an appropriate level. Many Taiwanese universities however are still wondering how they can resolve the difficulties of assigning students to classes of an appropriate level.

In this paper, we will first discuss various methods of assessing college students' English proficiency level. Then we will show how a valid computerized vocabulary levels test (Vocabulary Levels Test created by Paul Nation) could be used as an effective English language placement tool for college EFL students. The authoring program and content of NTOU (National Taiwan Ocean University) placement test are introduced and the procedures of using the computerized test are illustrated. Moreover, the piloting work of including a computerized

listening test in our computerized placement tests is presented. Last, the limitations and potentials of using computer-assisted language testing in language education will be discussed.

Assessing College Students' English Proficiency Level

There are many different ways to assess college students' English proficiency levels. If we want a convenient way of assigning students to classes of an appropriate level, the English score of the Joint College Entrance Examination would be a possible solution. Nevertheless, some teachers might argue that the tests on listening and speaking skills were not covered in the entrance exams, and these important skills should be assessed if the teaching goal is to help students to develop language skills in these areas. Therefore, a comprehensive battery of tests, including tests on listening, speaking, reading, and writing, should be used as placement tests. The problem with a comprehensive set of language tests, however, is that they take long time to administer and mark. In addition to these two possibilities, some other teachers would prefer a general English proficiency test with fewer testing items that might quickly diagnose learners' English proficiency level.

Vocabulary Levels Test as an Effective Placement Tool

Speaking of a simple placement test from which we can obtain the test results quickly, Meara and Jones (1988) proposed that a computerized vocabulary levels test could be used as a language placement test. Their justification is that "vocabulary knowledge is heavily implicated in all practical language skills." (cf. Laufer, 1992; Laufer, 1994; Laufer & Nation, 1995) Furthermore, Anderson and Freebody (1981) indicated that speakers with a large vocabulary performed better on a wide range of tests than speakers with a more limited vocabulary. Their findings were similar to the research outcomes of Chen (1998, 1999). Chen adopted one vocabulary levels test, Nation's (1990) Vocabulary Levels Test, to assess Taiwanese college students vocabulary levels and found that Taiwanese college students' scores in Nation's test were closely associated with their later test performance (scores of different language tests) in the Freshman English classes. A Pearson correlation coefficient test shows that there is a significant correlation between learners' vocabulary test scores and their midterm and final exam scores. The results of the statistical analyses are summarized in Table 1 below.

Table1. Correlation Matrix for Vocabulary Test Scores and Midterm/Final Scores

Nation's Vocabulary Levels Test	
Midterm	.679*
Final	.441*

p < .01, N = 174

As shown in Table 1, learners with a larger vocabulary were able to get good grades in the Freshman English course. Based on the empirical research findings, vocabulary levels test can correctly reflect English learners' general proficiency level. A valid Vocabulary Levels Test thus can be used as an effective placement tool which helps to assign college students to appropriate proficiency levels.

Creating Computerized Vocabulary Levels Test

As can be seen from the discussion above, the vocabulary levels test can be an effective tool for assessing learners' English proficiency level. So far, several different vocabulary levels tests or vocabulary size tests have

been created and developed by researchers (Nation, 1983; Meara and Buxton, 1987, Meara and Jones, 1988; Nation, 1990, Hever, 1995, Cobb, 1999). According to Paul Meara (1996, p. 38), one of the leading researchers on second language vocabulary, Nation's (1983, 1990) Vocabulary Levels Test is the "nearest thing we have to a standard test in vocabulary."

Despite the validity of Nation's Vocabulary Levels Test in assessing learners' English proficiency level, to assess several thousand English learners by pencil and paper remains very costly and time-consuming. Since language placement tests are commonly adopted by language training programs worldwide, how to make the testing process more efficient and more accurate has been a concern of language educators.

Meara and Jones (1988) and Hever (1995) had proposed that we can turn an effective vocabulary levels test into a computerized one. They argued that computers can help teachers to grade the placement tests and can show the test scores to students immediately. The computerized vocabulary levels test created by Boo Hever is briefly introduced below. The computer program assesses his/her vocabulary size and immediately gives a report to the student when he/she completes the test. The sample question and the result are shown below in Figure 1 and 2.



Figure 1. An example of the test items

As computers become more and more affordable and powerful, various computerized/computer assisted language tests have become popular. For example, the computerized TOEFL (Test of English as a Foreign Language) has become an option of the traditional TOEFL test. There are quite a few advantages of using computerized test. Computerized tests are efficient since computers can grade students' scores quickly and send the test results back to students immediately. Furthermore, test takers' performance in the tests can also be stored in the computer and can be retrieved for later analysis.

Authoring Tool Used at NTOU

As computer-based training (CBT) becomes more and more popular, there are many authoring tools and programs for creating and administering online tutorials and tests. Most of these programs are easy to use and language teachers do not need to worry much about technical details of these authoring programs and can fully concentrate on the content of the tests. However, selecting a suitable program from a wide variety of available

programs is not a simple task. With limited budget, NTOU faculty has carefully evaluated various online language testing systems. An authoring package called TestPilot by ClearLearning was chosen because it has many important authoring functions we need and its price is not very high. TestPilot can be used to create and administer surveys, tests and assessments over the web or Intranet. TestPilot administers the assessment, records each user's submission, automatically scores those submissions, and provides customized feedback to the user.

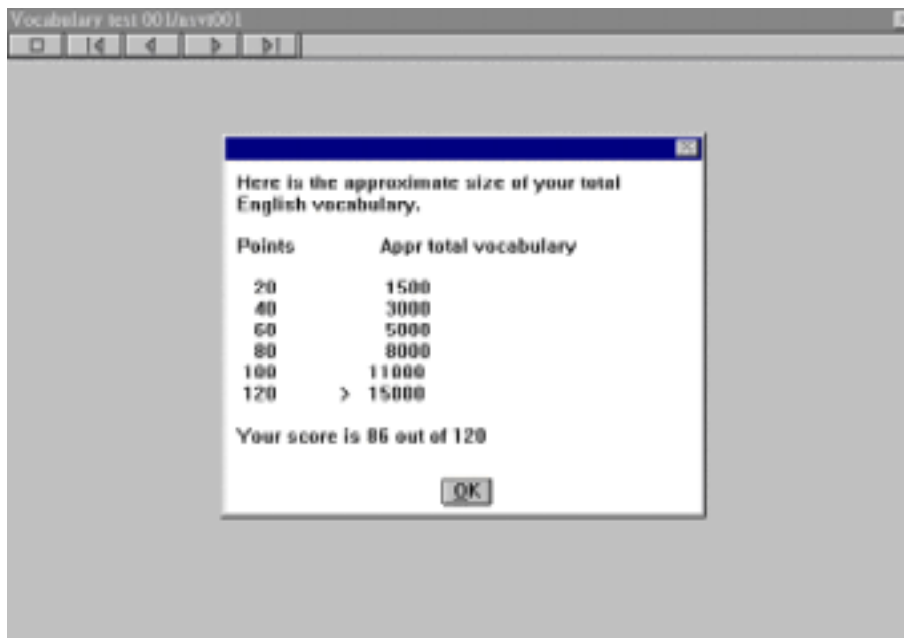


Figure 2. The test results as calculated by the computer

Content of NTOU Computerized Vocabulary Levels Test

Paul Nation's Vocabulary Levels Test is divided into five levels: 2000-word level, 3000-word level, 5000-word level, University word level, and 10000-word level. The 2000 and 3000 word levels contain high frequency words. The University word level represents one type of specialized vocabulary. The 5000-word level is on the boundary of high- and low-frequency words. The 10,000-word level contains low-frequency words. A matching type of test was used with six words and three meanings/definitions in each question. One specific question is shown below.

1. blame
2. hide ____ keep out of sight
3. hit ____ have a bad effect
4. invite ____ ask
5. pour
6. spoil

The definitions in the test use words from a higher frequency level than the tested words. The words from the 2000-word level use words in the first 1000 words of English. The words at the 3000-word level are defined by words in the *General Service List* by Michael West (1953). Nation indicated that the chances of guessing are low, and learners' scores on the test can be taken as a close approximation to the proportion of words in the test that they know.

The learners have to match the words in the left column with the definitions in the right column. When marking the test, we give one point for each correct matching of a word and its definition. There are 18 questions for each vocabulary level. A score of 12 out of 18 indicates that approximately one-third of the words at that level are not known. Thus, there will be at least 200 to 300 words worth studying at that level. If a learner scores 12 or less out of 18 in a section of the test, then it is worth helping that learner study the vocabulary at that level.

Nation's test samples five different frequency levels (2000-word, 3000-word, 5000-word, university word list, and 10000-word). Based on the empirical findings of Chen (1998, 1999) and Cobb and Horst (in press), most first and second year Taiwanese and Cantonese college students, however, were evaluated at the 3000 word to 5000 word frequency levels. Very few Taiwanese and Cantonese had reached the level of the University Word List. Thus, the computerized vocabulary levels test created at NTOU excludes the 10000-word level test. There are only four vocabulary levels and each level contains 18 questions. There are 72 questions in the computerized vocabulary test. Moreover, the matching type of test as shown above was converted into a multiple-choice test for the convenience of presentation.

Procedures for Using the Placement Test

The procedures of using the NTOU computerized Vocabulary Levels Test are briefly described below. Each stage is illustrated with a screenshot.

Stage One. Students enter the testing system via a Web browser (either Internet Explorer or Netscape Communicator) and type in their name and password (student ID) to request a placement test, as shown below in Figure 3.



Figure 3. Log in and requesting a test

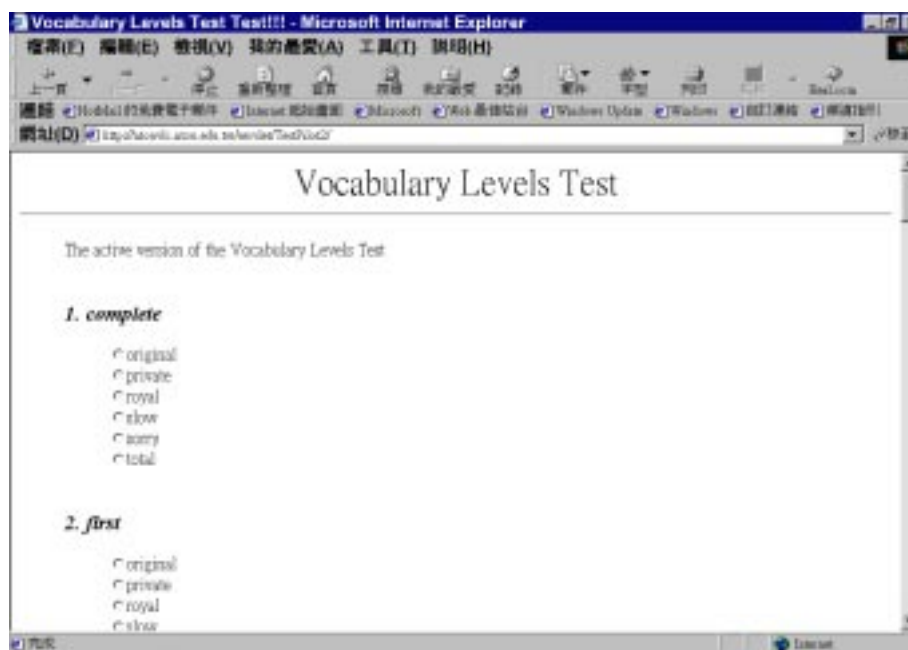


Figure 4. The computerized vocabulary levels test

Stage Two. Students then read the Test Instructions on how to complete the language placement test.

Stage Three. Students begin to take the language placement test and answer the multiple-choice questions, as shown on the previous page in Figure 4.

Stage Four. After the students finish the test, they can click on the submit button to send out their answers to the server, as shown below in Figure 5. They will then receive a confirmation message indicating their answers have been processed, as shown below in Figure 6.



Figure 5. “Submit your responses” button for sending out answers



Figure 6. Feedback on each item and test results

Stage 5. Students receive an immediate report on their performance, and the report includes detailed feedback on each question as well as the total score, as shown below in Figure 7. Test results can also be sent back to the test takers via e-mail.



Figure 7. Feedback on each item and test results



Figure 8. Test pilot system owner options

Stage 6. The computer system stores all the test scores of the students. As shown below in Figure 9, the test owner has various options to gain access to test results. Since the system can automatically record learner's performance in the test, as shown below in Figure 9, language teachers and researchers are able to conduct further analyses on learners' performance in these tests and design/choose more suitable teaching methods/materials.

#	User	Date	Time	IP	Q4270	Q4280	Q4290	Q4300	Q4310	Q4320	Q4330	Q4340	Q4350	Q4360
1	60340	03/21/2000	13:39:44 GMT	203.133.1.74	original	prinkle	elect	melt	manufacture	hide	spoil	invite	grade	

Figure 9. The records of user responses

Limitations and Future Research

Despite the fact that a computerized vocabulary test can provide very efficient and accurate measurement on language learners' language competence, however, the administering of the tests to learners would constitute a serious problem. Currently, although the tests shown above can be delivered easily via any popular web browser and shown on the computer screen, we still need to ask students to show up in a computer laboratory to take the placement test. If we allow them to take the test via the computer networking, either the Internet or Intranet, it is impossible to determine if there is any student cheating during the test.

Each year more than one thousand freshmen will enter NTOU and the language center has established two brand new computer labs with about 80 networked multimedia computers available. Under this condition, it would not be too difficult to administer the computerized placement test at these two computer labs. However, if there are several thousands of students and there are few computers available for the placement test in a university, the administering of computerized placement test would run into serious difficulties.

Another possibility proposed by Stanford University of administering computerized language placement test is to ask college students to follow an honor code and students can then take the language placement test via the computer anywhere. In this case, students can gain access to the placement test from their home, dormitories, public computer lab when convenient. Although this method has become popular; however, it is not clear if the system currently adopted by Stanford and several other universities (e.g., Northwestern University) will be adopted in Taiwan in the near future.

This paper highlights the needs of developing an adequate working system for language placement testing and illustrates how computerized placement tests can be created and used. It is expected that through language placement tests individual college students will be able to receive English education which is tailored to their real needs. Due to some practical constraints, now it might not be possible for many Taiwanese colleges and universities to run a computerized language placement test. However, as computers become more and more significant in language curriculums and language education, very soon the availability of computer hardware might not be a problem. As all Taiwanese universities/colleges and students demand better English communication skills, the research on using computers in language teaching and language testing should receive proper attention so that we language educators can continue to improve the quality of English language education.

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The Contribution of Virtual Language Center on Foreign Language Education

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Web-based Language Learning: NTOU Virtual Language Center

There are different ways of designing a virtual language lab/center. We at NTOU mainly target at college level students and hope to help EFL students obtain better commands of English. Due to limited funds and human resources, now we have five major sections in our virtual language center, as listed below.

1. The Online Courses. The main service is the audio on demand. Moreover, we also have some facilities for online discussion and so forth.
2. Resources Collection. Currently the key service of this section is an online concordancer for learners to quickly consult word/phrase usage.
3. CD-ROM/Internet Evaluation: This section introduces various language learning sites to Taiwanese students, and at the same time we will guide them how to assess these materials.
4. Online Testing System: Several online tests are available, including Vocabulary Levels Tests and several popular tests in Taiwan.
5. Chatting Area: Several Chatrooms are available for online interaction and practices in English.

Improving Listening Ability by Using Audio on Demand

Foreign language skills have become more and more important in today's world. The importance of listening skill in second language development is widely accepted by second language acquisition researchers. Nevertheless, as pointed out several Taiwanese researchers (Chang, et al. 1992), the listening competence of many Taiwanese EFL students remains poor. Thus, there is an urgent need for students to practice English listening frequently.

With the development of Internet technology (e.g., multimedia-streaming technology), college students off campus would have easy access to material distributed through a web browser. They could listen to their streaming audio lessons on a computer, and even take a comprehension test and receive immediate feedback. Distributed learning material would be texts, audio clips, and video clips. This type of anywhere and anytime language learning should allow more language learners to practice English listening at their own pace.

With the kind permission from a famous publishing company, McGraw-Hill company, we at NTOU were able to digitize two popular ESL listening/speaking textbooks- Interaction I and Interaction II. We use Realencoder, a free authoring tool provided by the Progressive Network, to convert the traditional wav. files into the RealAudio format. All the audio tapes of Interaction I and Interaction II were converted into digital RealAudio ra. files.

After completing digitizing all the tapes, we install RealServer on our Windows NT server before delivering the digital audio files to students. In fact, the regular HTTP mechanism can still be used but the rate of delivery is indeed too slow. Thus we have to use RealServer by the Progressive Network. The price of professional version of Realserver (RealServer 5.0 Intranet Edition) goes far beyond we can afford. Fortunately, a free Basic RealServer

was also available and it works well if there are not many students logging to the virtual language lab at the same time. When the students link to the URL <http://ntouvlc.ntou.edu.tw>, they will first be guided to download the plug-in software, RealPlayer of the Progressive Networking company, and then enter the virtual language lab. Because the materials are copyrighted, so students would need to input their user name and password before using the materials as shown in Figure 1.



Figure 1. Log into the virtual language lab

After students successfully log into the language lab, they then can choose which exercise they would like to work on, as shown in Figure 2 below. The page number of a given exercise was also given.



Figure 2. Selecting a unit from a chapter

In addition to putting multimedia audio or video files on a web server, Godwin- Jones (1998) introduced several ways which foreign language teachers can make the Web sites more interactive/dynamic. Through the feedback generated by computer, foreign language learners will know if they have successfully completed a task.

There are different ways of making a Web site interactive. The first step we made was to prepare some interactive quizzes. After listening to a passage or a short story, students are asked to answer questions to check their comprehension. The Web page that is coded with the JavaScript will judge students' answers. One very simple example is given below. The students first click on the real audio/video icon the RealAudio, and the RealPlayer will pop up and play the selected file as shown below in Figure 3. Then they can answer the questions by clicking the possible answers as shown in Figure 4. Their answer will be checked and the feedback will be sent back to students immediately as shown in Figure 5. With the help of JavaScript, students can receive proper online feedback and learn a foreign language on their own.



Figure 3. Playing the RealAudio files



Figure 4. Listening quizzes created by JavaScript

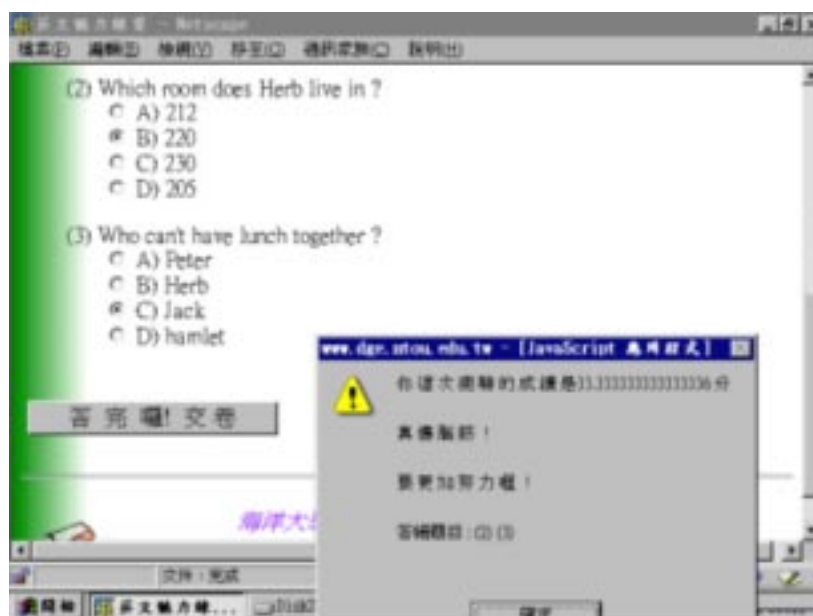


Figure 5. The feedback from the computer

Improving Writing Skills by Exploring Online Concordancer

In addition to the difficulties in English listening, another common problem of many Taiwanese students is that they are not sure about the usage of English words or phrases. One of the highly recommended learning strategies is to search the proper usage from a corpus by using a concordancer. This approach is referred to as the Data-Driven Learning (DDL) or Classroom Concordancing advocated by Tim Johns at Birmingham University. According to Odlin (1994), data-driven learning is an approach to language teaching that gives central importance to developing the learner's ability to "puzzle out" how the target language operates from examples of authentic usage. This approach is particularly associated with the use of computer concordances in the classroom but can be extended to other situations where the students has to work inductively from authentic data. According to Johns (1994) data-driven allows language learners to explore a large amount of authentic target language texts by using the searching and indexing power of computer. This approach to second language learning is not only innovative but also powerful since it can help learners to resolve their own learning problems and help them to become independent second language learners (cf., Kettemann, 1995 and Stevens, 1995)

Despite the data-driven learning is recommended by language teachers and researchers, it is not easy for language learners to find free concordancing programs and suitable corpora since these facilities are only available in the computer labs. To allow more learners to engage in data-driven learning, it is necessary to build a web-based concordancer.

With a research project grant from NSC (National Science Council), we created a web concordancer at National Taiwan Ocean University. In this project we not only try to provide a faster and more reliable concordancing system open to all interested English teachers and users but also try to overcome some weakness of currently existing web-based concordancers. We would like to create a web concordancer with the following features and options for Taiwanese EFL learners and teachers.

1. Fast and reliable connection and quick response.
2. Large corpora for ESL/EFL learners and teachers (including both NS corpora and NNS learner corpora).
3. Larger contexts for any searched word.

Since we have only limited funds, we do not expect to surpass the commercial web site such as Collins COBUILD or the well-funded project of Hong-Kong Polytechnic University. We aim at creating a fast, reliable, and friendly web concordancer for Taiwanese EFL learners and teachers. We will discuss the goals outlined above in details in the following sections.

First, the connection to NTOU web concordancer can be faster than the connection made to other web sites in other countries. For TANET user and other users in Taiwan, we expect that our web concordancer will be able to respond to learner's queries within 10-15 seconds. Moreover, to increase the searching speed, we reduce each corpus size to around 10-15MB. Second, we try to include various corpora. Due to the copyright restrictions, we have to rely mainly on the free electronic texts from Gutenberg projects. We are also negotiating with several local English newspapers about putting their electronic texts online for educational purpose. In addition to the native speaker corpora, we also have a smaller learner corpus available. During the past three years, we have been collecting English writing samples of Taiwanese college students. Now we have a 200,000-word EFL learner corpus, and this corpus will be a very precious resource for language teachers or researchers to better understand Chinese EFL learners' interlanguage. The interface of NTOU web concordancer is shown below in Figure 6. An instance of search outcome is shown below in Figure 7.



Figure 6. Interface of NTOU Web Concordancer

Third, since the display of larger linguistic contexts is fairly important when learners analyze the usage or the meaning of particular words or phrases. To make the searching process more friendly, NTOU web concordancer allows learners to have a convenient access to the larger context of any keyword.

By putting the concordancer online, we hope that more Taiwanese students can have opportunities to explore the power of data-driven learning. This unique language learning environment will encourage them to resolve their own puzzles and answer questions regarding English usage and grammar.

Web-based Language Testing Facilities for Learners, Teachers, and Researchers

A language center should be able to provide various language tests for different teaching and learning purposes. Language learners can take a diagnostic test to better understand their strength and weakness. Language teachers need to create various language tests to assess learners' learning outcomes.



Figure 7. The web concordance output

Web-based language test system can have some clear advantages: it can be used to create and administer surveys, tests and assessments over the web or Intranet. The system administers the assessment, records each user's submission, automatically scores those submissions, and provides customized feedback to the user.

As computer-based training (CBT) becomes more and more popular, there are many authoring tools and programs for creating and administering online tutorials and tests. Most of these programs are easy to use and language teachers do not need to worry much about technical details of these authoring programs and can fully concentrate on the content of the tests. However, selecting a suitable program from a wide variety of available programs is not a simple task. With limited funds, NTOU faculty has carefully evaluated various online language testing systems. An authoring package called TestPilot by ClearLearning was chosen because it has many important authoring functions we need and its price is not very high.

The procedures of using one popular language test, English vocabulary level test, created at NTOU are shown below. This test will quickly diagnose a student's English vocabulary size. Each stage in taking the test is illustrated with a screenshot.

Stage One. Students enter the testing system via a Web browser (either Internet Explorer or Netscape Communicator) and type in their name and password (student ID) to request a placement test, as shown below in Figure 8.

Stage Two. Students then read the Test Instructions on how to complete the language placement test.

Stage Three. Students begin to take the language placement test and answer the multiple-choice questions.

Stage Four. After the students finish the test, they can click on the submit button to send out their answers, as shown below in Figure 9. They will then receive a confirmation message indicating their answers have been processed, as shown below in Figure 10.

Stage Five. Students receive an immediate report on their performance, and the report includes detailed feedback on each question as well as the total score, as shown below in Figure 11. Test results can also be sent back to the test takers via e-mail.



Figure 8. Log in and request a test



Figure 9. “Submit Button” to send out answers

Stage Six. The computer system stores all the test score of students. As shown below in Figure 12, the test owner has various options to gain access to test results. Since the system can automatically record learner’s performance in the test, as shown below in Figure 13, language teachers and researchers are able to conduct further analyses on learners’ performance in these tests and design/choose more suitable teaching methods/materials.



Figure 10. The confirmation message.



Figure 11. Feedback on each item and test results

Improving Speaking and Writing Skills through Online Chatting

Taiwanese college students are particularly weak in oral communication because they have few opportunities to use the target language to communicate with other English speakers. However, speaking and writing in a foreign language needs many practices, and interacting with other speakers of the target language is extremely beneficial. The empirical research on NS (native speaker)-NNS (non-native speaker) face-to-face interactions found that second language learners were able to receive comprehensible input and corrective feedback (from NS's modifications of linguistic input) and were given opportunities to produce modified output (comprehensible output) during the meaning negotiation process (cf. Pica, 1987, 1989, 1991, 1994, 1996). Some of the theoretical terms

(comprehensible input, corrective feedback, and comprehensible output) in second language acquisition research is briefly explained below.



Figure 12. The test pilot system owner options.



Figure 13. The record of user responses.

Online chatting is particularly effective in improving learners' spontaneous interaction with other speakers of the target language. Since the communication is synchronous, learners have to quickly transform their ideas into language. the target language. This exercise will help them move from understanding the language to using the language actively. People in different locations or countries can log into an online chatroom at the same time and can "chat with" each other to exchange their opinions. With the help of computer networking technologies, second language learners can be encouraged to use the chatrooms to communicate with a native speaker and their peer learners.

We can reasonably argued that text-based negotiations/interactions happened in online chatrooms can provide similar beneficial learning conditions as those found during NS-NNS face-to-face negotiations. Researchers (e.g., Pellettieri, 2000; Blake, 2000) have found that computer mediated communication (CMC) between NNS-NNS can also provide many of the alleged benefits ascribed to the NS-NNS face-to-face interactions.

At NTOU, we have incorporated the online chatting service in our virtual language center and encourage students to log in chatrooms for practices, as shown in Figure 14. Furthermore, all the students in English conversation classes were required to participate in online chatting as part of their homework.

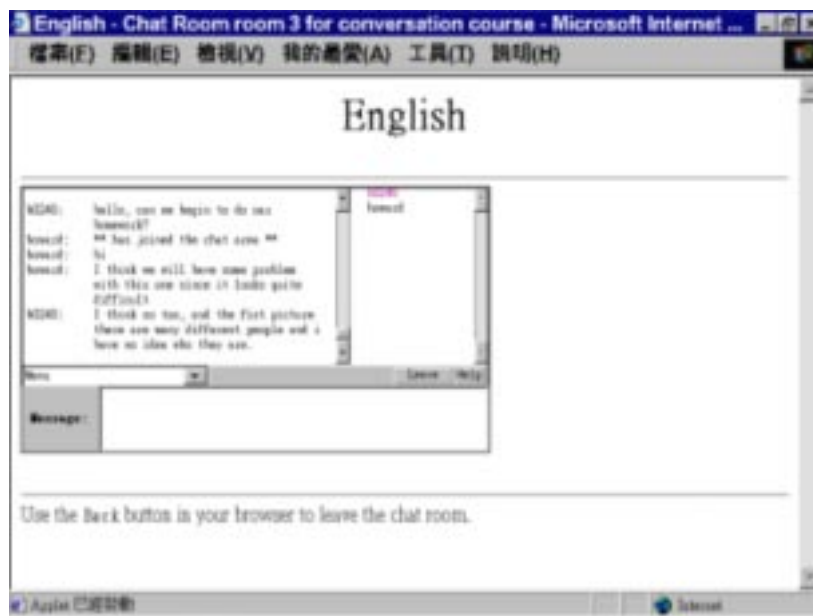


Figure 14. Online chatting

Future Development

As can be seen from the discussions above, web-based language learning environment can be a very rich and stimulating learning environment for Taiwanese college EFL learners. Students can possibly benefit from using various online services provided by this virtual language center from any place at any time. So far, we only begin to explore the power of web-based language teaching and learning environment. There are still plenty of room for improvement. Several projects we plan to accomplish within a year or two are:

1. For listening: Supplement streaming audio with streaming videos and add an online listening strategies training session.
2. For writing: Create online feedback mechanism and some intelligent error-detecting devices.
3. For speaking: Offer pronunciation training with some web-based speech recognition mechanism.
4. For reading: Create a click and show online learner dictionary to facilitate reading comprehension.
5. For testing: Provide various types of online tests and quizzes for assessment and practices.

It is expected that our virtual language center will inspire more language teachers and researchers to create more useful and interesting web-based language learning materials. When more and more web language learning resources are available, more Taiwanese learners will surely benefit from them.

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Corpus Tools in Language Teaching and Learning

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Abstract

The aim of this paper is to show how corpus tools can contribute to the effective teaching and learning of languages and how they can be combined with speaking and listening activities in the language lab.

The first part of the paper will be a demonstration of what kind of information can be retrieved from a corpus and how teachers can use the information in a multimedia environment. The second part of the paper will describe how students can use these corpus tools themselves improving the following important skills needed to be a successful language learner: (a) observation; (b) the ability to draw conclusions from observations; and (c) making intelligent guesses. The third part of the paper will show how the activities mentioned can serve as a basis for various kinds of speaking and listening activities in the language lab.

Introduction

About ten years ago, when technology in education was mentioned, most people automatically thought about CALL programs (computer assisted language learning). Nowadays, almost exclusively, multimedia applications come to mind: talking dictionaries, speech recognition, encyclopedias, etc. There are, however, less spectacular and less well-known computer applications serving language teachers and learners alike. Corpus tools (tagging, parsing, lemmatizing, concordancing, etc.) are good examples of such programs.

Usually corpus tools are divided according to their function. Corpus tools can be used to annotate a corpus or retrieve information from it. As annotation tools are not widely available for teachers, I am going to focus on retrieval tools and even within that group, concordancing will be discussed in detail.

Table 1. Corpus Tools

Retrieval	Annotation
frequency lists	tagging
word lists	parsing
lemmatized frequency lists	
concordances	

Frequency and Wordlists

A frequency list is a list of words that gives information about the number of times word-forms have been used in a corpus. A simple frequency list will have *come* and *comes* as different items. Most of the commercially available programs or program packages can automatically generate such lists, for example WordSmith (Scott, 1996). However, MicroConcord (Scott & Johns, 1993), an earlier popular program is one which cannot. Frequency lists can be used to compare text types from the point of view of stylistics or text typology (Stubbs, 1996). Teachers or even students can also create useful wordlists in order to facilitate the acquisition of a language for special

purposes. Willis and Willis based their *Collins Cobuild English Course* on the frequency of English words in the *Cobuild Corpus*. ‘The 700 hundred most frequent words of English account for around 70% of all English text. That is to say around 70% of the English we speak and hear, read and write is made up of the 700 commonest words in the language.’ – says Willis (Willis, 1990, p.vi) However, we should not forget the fact that the most frequent words are function words, which are useless by themselves. A good collection of content words can help students very effectively in ESP (English for Specific Purposes). In CL literature the number of times a word-form appears in a corpus is called the tokens of that word. However, the same expression, tokens is equally used to give the number of words in a corpus. “A lemma is what we usually mean by a ‘word’ the composite set of word-forms is called the lemma.” (Sinclair, 1987, p.173)

Frequency lists and word lists basically give quantitative information, which can be compared and interpreted in many different ways. They can be very useful in teaching stylistics or academic writing, in analysing literary works, in raising students’ awareness, and also in teaching learning strategies. Lists can also help teachers make decisions about priorities in teaching and creating teaching materials.

Tagging and Parsing

This is one of the areas where CL can be used very effectively for the teaching of the mother tongue as well. In fact, it could probably be more useful in that area than in helping foreign learners, who are not specialised in linguistics. Tony McEnery reported at the AILA (Association Internationale de la Linguistique Appliquée) Conference in 1999 (McEnery, 1999), that he used interactive tagger and parser programs in a linguistic course at university level to help students (native speakers of English taking a course in linguistics) identify parts of speech and functions within sentences. In Great Britain, grammar had been ignored for almost 3 decades at school; as a result, even university students have had little knowledge of the linguistic metalanguage. Since grammar was not one of the popular subjects, changes were badly needed. When students use the above mentioned interactive programs, they can get immediate feed-back and can see the right answers straight away. McEnery reported that students were far more motivated than they used to be when doing such activities in the traditional way. As they were more motivated, they spent more time on this activity and the results were better. These programs can be used not only at university but at lower levels too regardless of whether the students are native or non-native speakers.

Concordancing

Concordancing may be best-known of all corpus tools, and with the spread of computers and the easy access to the Internet, this might be the most popular as well. No wonder, since it can be used in many different ways and for many different purposes. Another reason may be that some of the concordancing programs are available for free to anybody who has access to the Internet.

As I believe that learning a language is like discovery, I think that all learners are explorers, researchers themselves. (Szirmai, 1997a) The more language they want to acquire, the better researchers they have to become. In order to achieve this, they should possess three very important skills: 1) observation; 2) the ability to draw conclusions from observations; and 3) making intelligent guesses. This is exactly what children do when they are learning their mother tongue. Children do it unconsciously and very successfully. Somehow, maybe as a result of “proper learning”, a lot of people seem to lose this ability and they have to “relearn” it.

Concordances are ideal for observation, both in hard copies and on-line. “A concordance is a collection of the occurrences of a word-form, each in its own textual environment.” (Sinclair, 1991, p.32) The on-line version is more flexible and easier to use if the user has basic computer skills. As soon as the paper version is printed out, no changes can be made about how the concordance lines are printed out. With the on-line version, different patterns can be recognised at the touch of a key. Without attempting to give a full list of available concordancing programs, or trying to describe them in detail, their main features could be summarized as follows (Szirmai, 1998):

1. they are able to run text files in ASCII format, sometimes extended ASCII as well;
2. most of them can give a frequency list of all the different words used in the text or texts;
3. the use of the asterisk makes it possible to find different verb forms, e.g. The result of a search for mak* will contain the forms makes, making, maker but unfortunately anything else that starts with mak, like makeshift, make-up, make-believe, etc.;
4. the results of the search are presented in a KWIC format (key word in context)
5. it is possible to look for units consisting of several words in the text, e.g. look* as if;
6. the words to be searched do not have to occur next to each other, the span can be specified, e.g. 5,5 to the left and right.
7. some can automatically index texts and some can only handle pre-indexed texts;
8. they provide instantaneous statistical information about collocates;
9. search results can easily be embedded into documents.

Table 2. Example of the KWIC Format

```

_rbitrarily to exclude an expert in a key area of human rights from our delegat_
_pe just over a year ago. Many of the key arguments deployed by the Prime Minis_
_ / Tragic comedians, life in a miner key: Ariel, Wired, K-9, Cookie and Play M_
_r the DSS, was unequivocal about the key asset in the operation _ 'people will_
_math of the 1987 stock market crash. Key assets, their values slashed post-cra_

```

Michael Stubbs wrote about the KWIC format of a concordancer: 'This provides a convenient layout for studying how a speaker or writer uses certain words and phrases, and whether there are particular patterns in his or her use of language' (Stubbs, 1996, p.xiii). In general, concordancing programs are very helpful in the study of lexis, grammar and stylistics.

Collocations are particularly difficult for non-native speakers, even if their fluency and accuracy is quite high (Howarth, 1996; Biskup, 1992; Szirmai, 1997b; Brown, 1974; Hakuta, 1974). Since patterns are easy to spot in KWIC format, concordancing programs are very useful in the teaching and practicing of collocations. With the help of a concordancing program, teachers can provide students with processed language material for observation, the quantity and the quality of which is far superior to what could have been produced just a few years ago without the help of the computer. When the material is presented to students, it does not matter whether the information to be observed is printed out or is on the computer screen. What matters is that it should be carefully chosen by the teacher, especially when starting this kind of activity. The teacher should consider the *amount* of information and the *content* as well.

Concordancing programs can also promote individual, pair or small-group student-controlled, autonomous learning. After some practice the students could do their own research projects on pairs like *high – tall*, *wide – large*, or any other pairs they have had problems with. As learning is like discovery, the best way to learn is to make their own discoveries and formulating their own rules. That is exactly what researchers do, so students can eventually carry out their own small-scale research with the help of the teacher. Observation and analysing the data help students with identifying word senses, collocations, colligations, grammar awareness, vocabulary, spelling, practically everything.

Guessing is another important skill, which many students lack when listening to or reading in a foreign language. Even in their mother tongue, some people are better, others not so good at restoring a conversation or at least the gist of it when they missed parts of the utterances. It seems that our brain needs practice, just like our body when we are learning new skills or trying to improve existing ones. *Contexts* by Tim Johns is a corpus-based program that helps students develop their guessing and observation skills depending on how they use that program. As this program is a good example of what teachers can do with concordancers, let us have a look at how it works. One big advantage of this program is that it can be authored, so any teacher can create similar activities appropriate to their students' level, learning goals and interests.

Contexts

Tim Johns used the *Birmingham Corpus* for his research. First, on the basis of his experience at the *English for Overseas Students Unit of Birmingham University*, he identified problem areas for foreign students. Then, Johns selected patterns and collocations of the items chosen. There are more than a thousand items in his programs, put in thematic groups. The items come from a database, which 'includes passages from:

1. The popular science journal 'New Scientist'.
2. The scientific research journal 'Nature'
3. Newspapers such as the 'Independent', 'Times' and 'Guardian'
4. Books, both fiction and non-fiction, on a range of different topics.
5. Transcripts of lectures given in the University of Birmingham.' (Johns, 1994)

Tim Johns used the computer program MicroConcord (Scott & Johns, 1993) to extract contexts from the database. Some of the groups of items are: body parts, suffixes, prepositions, food, etc. If the student wants to study these items, they can see all 10 contexts of the item at the same time and simply observe the data. In the Quiz mode, they can test what they already know. After they finish the quiz, when they can see all the contexts they are asked some 'research questions', usually the following ones: 'Study these contexts of "KWIC" carefully before you continue. Are there any words which seem to be "close friends" of "KWIC"? Are there any special meanings of "KWIC"? (Johns, 1994)

The reasons why this program can be recommended are as follows:

1. As I said, guessing is very important in learning a language. Although sometimes several words may possibly be used to fill the gaps with, as more contexts are given, the choices will go down to only one possible word.
2. In early computer quizzes, answers were never accepted if they were misspelled or even if a capital letter was used instead of a lower case character. In this case, the program kindly reminds the student not to 'unnecessarily double a character' or to 'look at the xth letter of the word'. This program will help to learn spelling by drawing attention to the nature of the spelling mistake.
3. It also gives an analysis of the student's performance in a matter of fact way.
4. Students will not lose face if they make mistakes as it is only the computer that "knows" about the mistakes and not the teacher.
5. The program provides a huge number of contexts but the teacher can create new activities for the students too: the program can be authored.

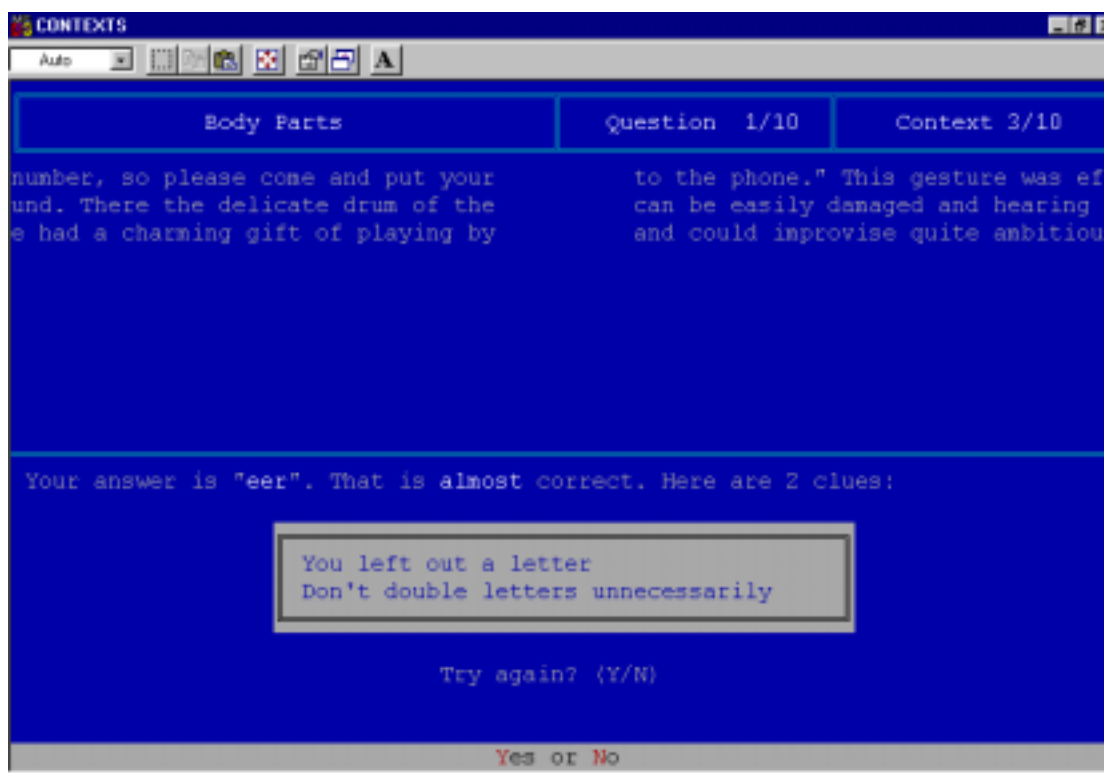


Figure 1. Screenshot from *Contexts*

Other Related Activities

If the teacher wants to combine the practice of observation and guessing skills with speaking and listening tasks, the following activities may be interesting to try.

1. The teacher gives printouts with different contexts for the SAME word to two students. First they have to analyse their contexts and how the word is used and then give an oral report to their partner. Their findings will be different, but will complement each other. (concrete use of a word – *abstract*) The same can be done with translation equivalents.
2. One person is describing what he/ she can see in the data, the other student is taking notes of what their partner says.
3. One student is giving directions to the other student carrying out the search on a computer.
4. Students are given different corpus discovery tasks and they have to give oral feed-back to the group.

The number of web pages offering on-line courses and tutorials is steadily growing. Teachers can find a lot of teaching ideas and example activities to help them develop their own ideas. Sometimes, a summary of the types of activities and links them to the actual worksheets are given, which means that teachers not familiar with the programs and corpus ‘philosophy’ can test these examples before they invest money and energy into acquiring the programs or creating their own worksheets.

The literature of CL and education is quite large, it would be impossible to enumerate even the most important publications. However, Tim Johns must be mentioned as he was one of the first researchers and teachers formulating the principles of Data-Driven Learning (DDL). Johns maintains a web page providing ample information and links to other sites related to this topic.

I have put an emphasis on the role of observation, drawing conclusions from observation and guessing. I do not think that I exaggerated their importance. Foreign language students need to be trained in using these skills and need to practice them. But before teachers can assist with these tasks, the teachers themselves have to have such experience, have to understand their importance and find the right methodology for passing them on to students. I believe that the use of corpus tools and practice in making and conducting corpus-related activities should become a standard part of language teacher training.

The merits and benefits of CL are becoming more and more evident in education, both in the teaching of the mother tongue and foreign languages. Data-Driven Learning is based on the principle that authentic language material is provided for students which they use for discovering linguistic knowledge for themselves, rather than being told grammar rules and how language is used. The increasing use of the Internet, which is accessible from anywhere in the world, as a source of useful information in this field, has been exemplified by some web pages. With the growth of multilingual corpora, parallel concordancing and comparative studies have already contributed to the training of professionals, such as translators and interpreters, but there still remains a lot of work to do in the application of CL tools.

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A Course Syllabus for ESP Classes Using Multimedia CAI Materials

Hisako Yamauchi

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Abstract

With the advance of computer technology, CAI materials for language study have been changing from simple ones which show only text on the screen to more sophisticated ones that treat sound, pictures and movies together with text. However, the effectiveness of CAI materials does not depend on how sophisticated and fancy the materials are. Repetitive, continuous and progressive learning efforts will develop learners' ability, and CAI materials should strongly emphasize these aspects.

In this presentation, various kinds of CAI materials developed by the presenter will be introduced, and ways in which the materials have been effectively used in the English curriculum at Kurume Institute of Technology will be described. A course syllabus for ESP (English for Specific Purposes) classes using multimedia CAI materials will be also introduced to invite discussion about effective use of technology in language education.

Introduction

With the advance of computer technology, computers have been used in English education in various ways. Computer Assisted Instruction, or CAI, was the earliest mode of utilizing computers in language learning. Next came the use of e-mail exchange. The mainstream usage of computers in English education is now moving to the use of the Internet. Many types of CAI materials are also available on the Web today.

Since 1988, when the CAI system using the Local Area Network was completed at Kurume Institute of Technology, the author has been using computers in English education. For example, the author developed several CAI materials for her students and used them in her classes; she required her students to exchange e-mail messages with college students outside of Japan; she assigned her students to search the Internet for information about automobiles they wished to drive in the future and to submit short papers about them. The institution where the author works is a university with only one faculty, the faculty of engineering. Therefore, the use of computers in education will help students to become literate in computer technology, no matter how effectively or ineffectively they are used in terms of language acquisition. Computer usage in general contributes toward achievement of one of the aims of the institution, that is, to make the engineering major students "Information Technology" (IT) literate. Her situation will be quite different from many language teachers. However, in this age of IT, the demand for using computers in English education in Japan will continue to increase for the foreseeable future.

In this presentation, problems in the use of CAI materials in education are reported and a course syllabus for an ESP course is shown to stimulate the discussion with the audience as well as among the panelists.

Problems

Too often at conferences like this, the benefits and effectiveness of CAI have been emphasized without acknowledging the drawbacks. However, it is necessary to overcome the drawbacks of CAI in order to attain any

benefits or effectiveness of the use of CAI in education. For the purpose of provoking discussion, the author will point out only drawbacks of CAI.

Cost

It costs too much if you buy CAI software for classroom use. Colleges and universities in Japan now invest a great amount of money to create a new computerized facility. However, they tend not to spend enough money to buy CAI materials for English education available in the market. If you purchase software for a CAI room or a CALL room with 50 PCs, you may need about one million yen to cover the expense of CAI software materials.

Availability

The software you pay a fortune for may not fit the needs and level of your students or the aims of your course. Software available in the market is made for general users, not for a particular group of students in your class. Sometimes only 10 percent or less of the content of the software will suit the level and needs of your students, and the reminder is too difficult or too easy, or inappropriate for your students' interest or unfit for their needs and the teacher's aims of the course.

Time and Energy

In order to solve the first two problems, teachers must personally develop suitable CAI materials for their own students. Then the problem of "time and energy" emerges. It takes too much time and energy to create software all by yourself for your students. However, the level of the materials will be suitable and the content will satisfy the needs of your students. The usability of the material will greatly increase, and your time and energy will be worth it, if you don't mind devoting your hours.

Effectiveness

It is very difficult to confirm the effectiveness of CAI in language education. Many papers have been written reporting the effectiveness of study with certain CAI materials. However, very few educators have compared two groups of learners studying the same content in different manners, by randomly dividing students into a control group who are studying with textbooks and perhaps with audio tapes, and an experimental group who are studying with CAI software. Such comparison of the improvement between the groups in their language ability will prove the effectiveness of the CAI materials. In most cases, the evidence for claims of effectiveness is based on the increase in scores between the pre-test and post-test given to the only one group of students who study with CAI materials. No information of such scores for a controlled group is usually available for comparison. Yet the aims of your English course include making your students literate IT, then the use of CAI will be worth pursuing regardless of the uncertainty of its effectiveness. On the other hand, if you conclude that the unconfirmed effectiveness of CAI in language learning does not satisfy the cost, time and energy of setting up the CAI room and developing CAI materials, then the use of CAI in English education will not be the best way. CAI seems most suitable for such kind of study that requires repetitive, continuous and progressive learning for vocabulary building and grammatical exercises.

Need for Renewal

Ten years ago, when computers were not widespread and not commonly used in education, language study with CAI materials greatly attracted the students' attention because it was a new way of learning English. In the last ten years, virtually every college and university provided computer facilities for use in education. Students have become used to studying many different subjects with computers. In order to keep attracting students' attention in new technology, CAI materials should be renewed every time a substantially new technology is introduced. New, fancier frames should be included in your new CAI materials so that your students will enjoy studying

English in a way they have never experienced before. It is, indeed, very hard work to continue renewing or creating CAI materials that keep up with the innovation of new technologies.

Table 1 shows the relationship between the electronic environment of the CAI rooms at Kurume Institute of Technology and CAI materials we developed.

Table 1. Electronic environment and CAI materials

	Electronic Environment	Computers, Language, CAI
1988 to 1995	Completion of the LAN	FMR-60, FMR-70
	Development of CAI materials	F-Basic
	Use of CAI materials	Text format only Vocabulary, Grammar
1993 to 1997	Windows	Windows Windows NT
	Curriculum and the use of CAI materials	Basic for Windows
		Sound and text Listening materials
1996 to	Multimedia type materials	WWW, CGI
		Perl
		Sound, pictures, movies and text Pronunciation practice materials

In the first stage, we started developing CAI materials for vocabulary building and grammatical exercises because we could treat only text. Figure 1 shows a frame of ESP vocabulary material. Students choose a correct

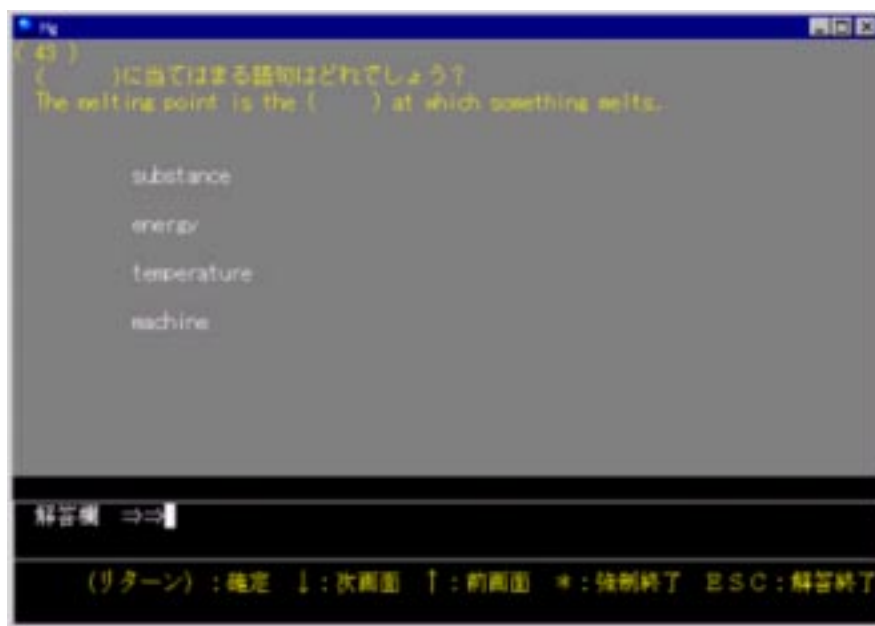


Figure 1. ESP CAI materials

answer from the choices and input it through the keyboard. There were two modes of presenting materials: the exercise mode and the quiz mode.

In the second stage, with the introduction of Windows-type computers in the CAI rooms, we began to create listening comprehension materials because new computers could process sound and picture together with text. Figure 2 shows a view of the listening comprehension material. When a learner clicks on the underlined portion, he/she can listen to the passage explaining the picture and answer questions concerning the passage.

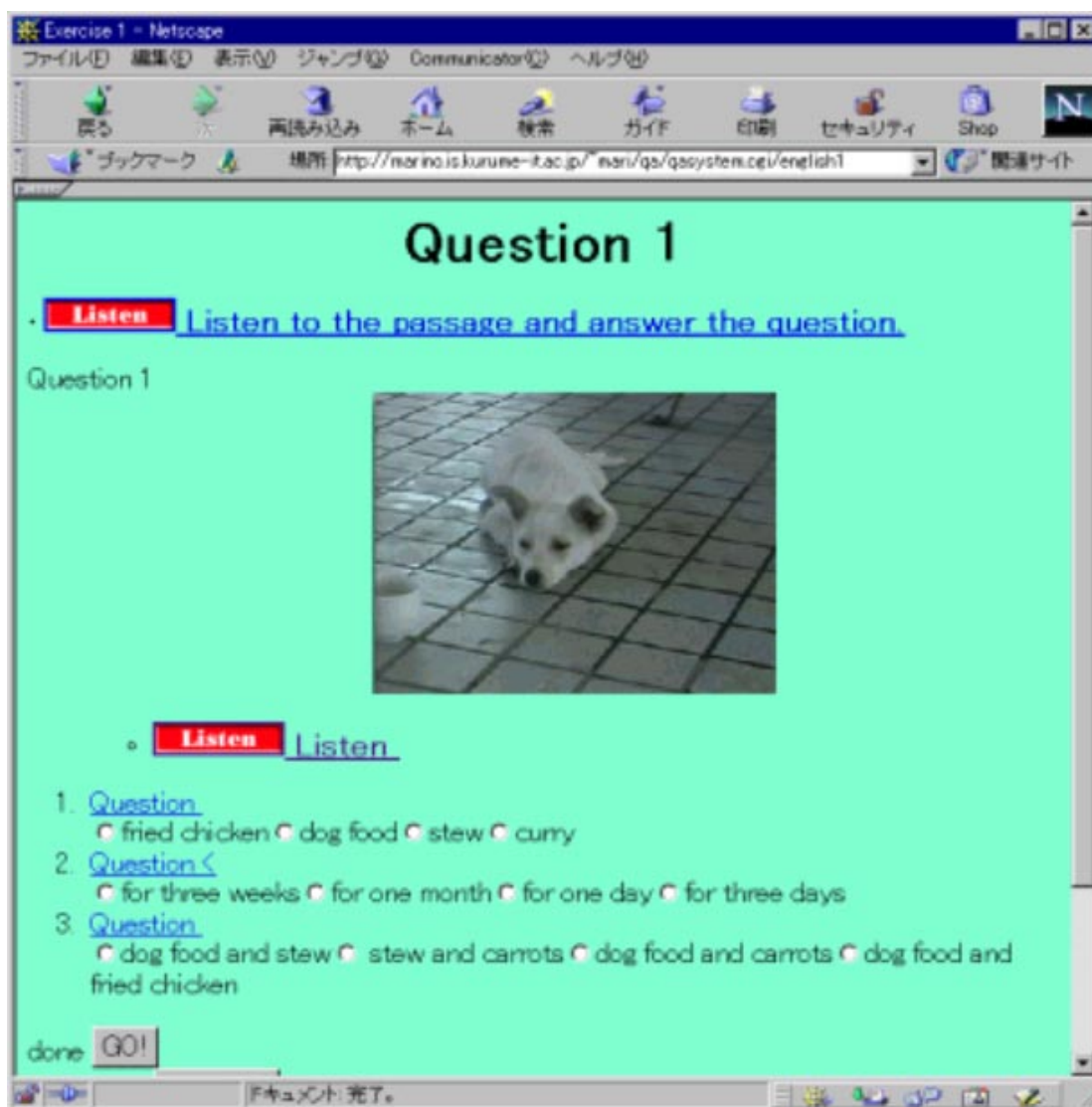


Figure 2. Listening materials

Our present system allows CAI materials on the Web, and now we are striving to develop materials for pronunciation practice treating movies, sound, and text all together. Figure 3 shows a view of the pronunciation material for the /r/ and /l/ distinction. Students can practice hearing the difference between minimal pairs of words read by native speakers while simultaneously looking at their mouth movements.

Technical support

In CAI rooms or CALL rooms, there are many computers installed which are connected with larger computers called servers. Most language teachers cannot manage or maintain such rooms. We need computer technicians or engineers for their set up and maintenance. To develop CAI materials for students' use, cooperation between language teachers and programmers is essential unless you, yourself, are a good programmer. If you cannot secure good technical support, it is very difficult for you to give lessons in CAI rooms or to develop CAI materials fit for the level and needs of your students.



Figure 3. Pronunciation practice materials

Integration of CAI in curriculum

Supposing that we could overcome all the six problems discussed above, let me consider what comes next in utilizing CAI. The main challenge then becomes how we can increase the effectiveness of the study with CAI materials. Our solution was to change the English curriculum so that the course using CAI materials became integrated in the curriculum as a whole. Table 2 shows the present English curriculum at Kurume Institute of Technology.

After several years of trial and error, we decided to use CAI materials for two purposes: (a) to review the lessons covered in regular ESP (English for Specific Purposes) class with a textbook and a blackboard, and (b) to give pre-exercises for a more advanced level of study in an advanced course in ESP. Since our institution provides only one faculty, the faculty of engineering, ESP means English for Science and Technology. CAI materials are used in the course called "Technical English" for sophomore students. The students study in their freshman year a very elementary level of ESP in regular classrooms. They study about 300 to 500 words in science and technology, as well as review some grammar often used in science-related literature. This course is called "Basic Technical English." In their junior or senior year, students can study more advanced level of ESP by enrolling in the course called "Advanced Technical English" as an elective if they wish. In this way, there is a link between the students' previous study and the CAI course, and the study done in CAI rooms serves as the base of the advanced course in the curriculum.

Table 2. English Curriculum at Kurume Institute of Technology

Courses	Year	Required or Elective	Features
Basic Technical English	1	required	small sized, 2 levels
Technical English	2	required	CAI
Advanced Technical English	3, 4	elective	
English Reading	1	required	
Intermediate English Reading	2	required	small sized, 2 levels
Advanced English Reading	3, 4	elective	
Oral English	1	elective	small sized
Intermediate English Reading	2	elective	small sized
Advanced Oral English	3, 4	elective	small sized

Need for a Well-Planned Syllabus

The final step for maximizing the effectiveness of CAI is preparing a well-planned course syllabus. It is indispensable to clearly set the goal of the course, to innovate more effective ways to present CAI materials, to find the best timing for explaining the materials students are studying, and also to find a better way to evaluate their work. I am still in an experimental stage in this sense because I constantly ask myself what kind of materials are best suited to the self-study nature of CAI; when students need the teacher's assistance in their learning process, or whether on-line quiz format is really the best suited for CAI or not. The syllabus in the Appendix indicates that the 90-minute class period is divided into three sections as follows: (1) students spend the first 20 to 30 minutes for exercises with pen and paper; (2) the next 30 minutes is the time when the teacher explains correct answers and students make corrections and understand the exercises; (3) the last 30 minutes is the self-checking time of the day's lesson using the CAI system. After several revisions of the syllabus reflecting the results of trial and error, more time tends to be spent for the exercises using traditional study with pen and paper, and for the teacher's explanation, than for the self-study with computers.

Conclusion

With the advance of computer technology, CAI materials for language study have been changing from simple ones which show only text on the screen to more sophisticated ones that treat sound, picture, and movies together with text. The effectiveness of CAI materials, however, does not depend on how sophisticated and fancy the materials are. Repetitive, continuous and progressive learning efforts will improve learners' language competence. Therefore, CAI materials should strongly emphasize these key aspects of language learning.

In order to increase the effectiveness of CAI, the course must be integrated in the curriculum so that the study done in the CAI rooms and that done in other classrooms can mutually reinforce student learning. In addition, we must always plan a better syllabus so that students will concentrate on their study instead of falling asleep during the class or daydreaming in front of a computer.

The plenary address by Dr. van Lier concluded, "Pedagogy comes first, then curriculum and computer is the last. But usually it is in the other way round." Our experience of developing CAI materials and using them in classes started from the use of computers as Dr. Lier pointed. We have already moved to the next step of integration

of the CAI course in the English curriculum. I'm glad to say that we are now reaching the primary aspect in education, pedagogy, by preparing well-planned syllabus for the course using CAI materials.

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Appendix

A Course Syllabus for Technical English at Kurume Institute of Technology

Course Name: Technical English (sophomore year, required course, 2 units)

Instructor: Hisako Yamauchi

Aims: The aims of this course are (a) to build up students' English vocabulary in science and technology, (b) to review expressions often used in the science-related literature and (c) to improve their reading ability. CAI materials are used for building up vocabulary, and strengthening basic grammar and acquiring English expressions. Students are encouraged to take the third level of the Test of English in Engineering.

Syllabus:

- 1st Week Pre-test and course orientation
- 2nd Week How to use CAI materials (CAI—Technical English 2)
- 3rd Week Vocabulary building (Exercise 1) (CAI—Technical English 4)
- 4th Week Vocabulary building (Exercise 2) (CAI—Technical English 8)
- 5th Week Vocabulary building (Exercise 3) (CAI—Basic Technical English 1)
- 6th Week Vocabulary building (Exercise 4) (CAI—Basic Technical English 2)
- 7th Week Vocabulary building and understanding expressions 1 (CAI—Basic Technical English 3)
- 8th Week Vocabulary building and understanding expressions 2 (CAI—Basic Technical English 4)
- 9th Week Vocabulary building and understanding expressions 3 (CAI—Basic Technical English 5)
- 10th Week Vocabulary building and understanding expressions 4 (CAI—Technical English 5)
- 11th Week Vocabulary building and understanding expressions 5 (CAI—Technical English 9)
- 12th Week (CAI—Technical English, 8, 9, 10)
- 13th Week Post-test

The Design of a Multimedia Language Learning Center and Its Applications

Harold Hendricks [Moderator]
Brigham Young University, U. S. A.

Panelists

In-Seok Kim, Dongduk Women's University, Korea
Howard Chen, National Taiwan Ocean University, Taiwan
Akira Morita, Waseda University, Japan
Ed Dente, Tufts University, USA

Overview

For over a hundred and thirty years, there have been machines invented to record the human voice and capture the sounds and rhythms of language. The use of technology to assist in the learning and teaching of language has a long and interesting history. It has an even more exciting future. The assemblage of various recording and playback devices into an artificial structure, such as the traditional language laboratory, is being challenged by the digital revolution. Methods to capture the sound and even the sight of language—both real and virtual—are distilling into an amazing array of digital devices that travel far beyond the confines of carrels or classrooms. In this setting of frenetic change, one designing a modern, multimedia language learning center must earnestly ask a number of fundamental questions concerning the nature and function of such a facility. This symposium addressed several of these questions and proposed some answers in an attempt to guide us in understanding how to best meet the challenges of new technology and new language teaching methods.

Professor Dente first addressed a number of issues that should be carefully reviewed before any language lab design is made. The issue of physical and virtual lab space was raised, since many of the functions of the traditional language lab are now possible through the internet. Professor Dente stressed the uniqueness of each lab facility and its relationship with the faculty and students who will use it.

Professors Kim, Chen, and Morita then described the new and interesting innovations in the design and programs of each of their lab facilities, emphasizing the greatly expanded role of digital media and the internet. Through the use of video and slides, each of the presenters highlighted the purposes and programs of their individual facilities and discussed the changing nature of language instruction as practiced in a modern, digital laboratory. Each provided to the audience a glimpse of the many possibilities the rapidly changing digital world provide in presenting, reinforcing, mediating, and assessing language to our students.

The Design of a Multimedia Language Learning Center and Its Applications*

Akira Morita
Waseda University, Japan

Abstract

At the symposium, I focused my presentation on the following subjects:

1. *Situation and the multimedia environments at Waseda University.*
2. *Necessity of an administering organization.*
3. *Need for cooperative work among those who are involved in multimedia education.*

Facts and Figures (as of 1999)

Waseda University has about 6 campuses, 9 undergraduate schools, 10 (+1) graduate schools, 2 high schools. Active Net Subscribers include 51,639 students (43,489 undergraduates, 5,070 graduates), 5,000 faculty and staff (1,541 faculty, 2,613 adjunct, 833 full-time, 1,300 staff members). Internet addresses are automatically distributed to freshmen. The students as well as the faculty and staff can have their own web pages on WASEDA network servers.

Supporting Organization

In order to meet the various needs of the students and the faculty, we need to have an administering organization, which is called Media Network Center. Its functions include administration and maintenance of multimedia environments and information education for the faculty as well as the students.

Media Network Center's functions:

1. Information Infrastructure Initiative, Library Online Catalogue and Resources,
2. Administrative Networking, Academic Information Networks, Media Faculty Support,
3. Courses and Seminars, Research Projects and Special Interest Groups

MNC Standard Computer Classroom Environment

MNC administers almost all of the multimedia classrooms at the university and all computer rooms with more than 3,000 PCs which are working under mostly the same conditions. The standards are as follows.

1. 3000 PCs in different schools and campuses: Standard hardware, software, desks, chairs
2. Uniform user interface and configuration: Central authentication and access record,
3. Multilingual secure configuration: Instructor and student folders,
4. Campus-wide maintenance agreement

Multimedia Learning Environment

MNC also supports three types of multimedia learning environments. Education is now world wide and we have already started Distance Learning with some universities outside Japan.

Ordinary Classrooms

'Multi-media Box' (with VCR, CTR, DVD, Network PC Slot, CATV)

In ordinary classrooms, the media are mainly used for the teachers to demonstrate or present their teaching materials. However, in MM classrooms, the class is more student-centered and interactive thanks to the following hardware and software.

Multimedia Classrooms

- Multimedia Language Learning Lab: Digital LL, http-based test, VOD
- Multimedia Workshop: Video capturing, MIDI, Scanners
- Networked Inter-Cognitive Environment - Classroom cameras, MPEG encoders
- 4 Mobile Network Classrooms
- Faculty Media workshop

http://www.waseda.ac.jp/mnc/RESEARCH/mnc_comm/n-technology/01.html

Intercampus Education - Distance Learning

* Inter-cultural Distance Learning through ISDN: CU-SeeMe, TeleMeet

<http://www.project.mnc.waseda.ac.jp/ccdl/index.html>

Comparison of Standard and Multimedia Environments (1)

In multimedia classrooms, classes are more student-centered and interactive thanks to the following hardware and software. Table 1, as an example, shows the specification and configuration of PCs, and activities done in the multimedia classrooms in Building #14 of the university.

http://www.waseda.ac.jp/mnc/RESEARCH/mnc_comm/n-technology/01.html

Comparison of Standard and Multimedia Environments (2)

Classroom Management

CAI, Monitoring and presentation of student display, Locked and remote student input, attendance and study record

Classes (As of 2000. 4., per 42 class hours) English 9, Chinese 8, Spanish 1, German 1, Others 3

Table 1. Specifications and Configurations of PCs

Area	Specifications
Software (Basically Common)	MS-Office 97 (Word98)
	Type Quick 1.06
	WinYAT 324.0.9. 0
	LH Melt 1.02.0.6
	Hidemaru Editor 2.29
	WS-FTP 324.50
	TeraTerm 2.3
	Netscape Navigator 4.04
	VirusScan 3.2.0
	Adobe PageMill 3.0
	Adobe Photoshop
	L E Dictionaries:
	BABYLON
Software (Multimedia Lab.)	KOJIEN
	Readers Plus E-J Dict.
	Study Wave 1.0 SP1 (CAI software)
	cWnn R 4.0 (Chinese input method and learning software)
	kWnn R 3.0 (Korean input method and learning software)
	Global IME 5.0+IE 4.0 (Chinese/Korean input method and learning software)
	GOLD WAVE 4.02 (Real time digital audio editor)
	Chinese Pronunciation
	You Be the Reporter: A Video Writing workshop
	American History "GTV: A Geographic Perspective on American History"
PCs	ATR Listening Practice
	TOEFL Simulation
	TOEIC Preparation Kit
	PC (Pentium,128Mbyte)
Hardware	15" TFT Display, 3.5" FDD
	640MB 3.5" MOD
	CD-ROM/RWD
	LCD Displays
	AV Equipment Control
	S-VHS VTR, DVCAM
	VTR DVD/LD/CD Player
	S-VHS/DV Player
	Overhead Camera,
	CATV Tuner, MD Player, CTR
	Student Displays (one per two students)
	LCD Projectors, Headsets
	MPEG1 VOD Servers

Class Activities

The personal computer is personal and individualistic by nature. Therefore, aside from self-study, teachers have to explain through the class activities why students are in a fixed room and at a fixed time, for example, nine to ten thirty in room #101. Therefore, we should focus the activities on group activities and presentation to the other members of the class. To let the student work together and let them know each other in English.

Group assignment, Self-introduction with slides, Web and e-mail, Group preparation for presentation, Printed material and online documents, Class presentation, Oral presentation with slides, Oral discussion, mailing list discussion, Essay writing, Word processing, documentation, referencing, Spreadsheet, Peer review, peer evaluation, Data analysis and presentation

Media Support for Faculty

To support such activities mentioned above, MNC has special facilities and supporting organizations. It also distributes PCs to all faculty members.

Faculty Media Workshop, MCC: Multimedia Contents Cannery, Faculty and other Web servers, Mailing lists for research groups, Mailing lists and IDs for classes, More than 6,000 IP addresses, Faculty Platform PC and support

Conclusion

My conclusion is simple and kind of old-fashioned. For the design of multimedia classroom, the most important thing, what we should think of first, is 'courseware', which may begin with deciding the purpose of the room: is it for self-studying or for an organized teacher-centered class? Many things depend on the course design, and the syllabus design we use.

The second thing is the viewpoint of 'classroom-engineering' as I wrote in the handbook. We should think of, for example, the height of desks and chairs or the space between desks, lighting, and air-conditioning. We should consider if it is comfortable for students to sit in the chairs and to sit at their computers for a lengthy period of time. They may need to watch the materials again and again, and need more time to respond to various types of tasks, not only through sound and voice but also pictures and written texts.

Machines are the third thing we must consider. Of course, we have to think of teaching materials.

In order to solve the problems, teachers have to cooperate with the technical and office staff who always support our education, engineers, and with vendors and makers. We should be more cooperative in the Network society.

Note

* This report is based on the cooperative research with Yasunari Harada, Eiichi Inui, and Mitsuru Mizuno.

Designing an Effective Multimedia Language Learning Program: A Pilot Study of Designing DV Movie News

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Abstract

This paper will propose the new type of Video CD instructional material. As an instructor and creator of DV material in the lab, a teacher needs an effectual, teacher-friendly and timesaving material to create for everyday class. In the present experiment, a Video CD created by the researcher with manual-worksheet instruction is shown to discuss its merits and demerits. Comparing with a ready made CD-ROM instructional materials, the learners are asked to reply the questionnaire about the experimental instruction using the Video CD. The findings from the questionnaire suggest some tips for designing DV movie news as follows: the Video CD has advantages as the learner-friendly tool that satisfy the learners' preference and enables them to process at their pace going back and forth. Applying the manual task to the Video CD instruction is almost accepted by the learners. Pedagogical discussion will suggest the necessity for the further study, producing DV movie of higher quality and higher performance.

Introduction

Though multimedia language learning materials have been highly developed and many varieties of ready-made CD-ROM instructional materials have been provided, it is hard to find an appropriate one for teachers and students' needs. Their merits and demerits have been discussed (Miyamoto, 1998; Fujieda, 1999; Kawanari, 1999; Mine & Yoshida, 2000; Hegelheimer & Chapelle, 2000).

For advantages: (a) Both scripts and pictures, especially movies, can help learners develop their comprehensions and keep them in their long/short memory effectively through their eyes and ears; (b) CD-ROM can be operated at the learners' individual learning pace; (c) CD-ROM can be easily applied in the lab; (d) Teachers can easily administer the class through CALL.

Then, for disadvantages: (a) Learners cannot deal with many functions programmed in the material efficiently and tend to skip some well-arranged learning stages; (b) There is more information and instruction than learners can process, which makes them less challenging; (c) Teachers cannot gain insights into learning strategies by each learner through CALL directly.

Williams and Burden (1997) stated four key elements of the learning process as the learner, the teacher, the task and the context. In the classroom the teachers will select certain types of tasks, which they will present to their learners in particular ways that reflect their beliefs and values. An important aspect of an educative experience is that the learners perceive the value of the task for themselves and their own development. Each learner is different, and will bring to the learning process a unique set of personal attribute, preferred ways of learning and learning strategies. Learners make sense of the learning situation and learning strategies. Teachers, therefore, need to provide a variety of language learning activities that allow for different learning styles and individual preferences and personalities: some visual, some auditory, some involving movement, some interactive and some analytic. Teachers and researchers interested in improving the effectiveness of CALL activities sometimes look for guidance from second language acquisition (SLA) research with the hope that CALL activities can be designed to create ideal conditions for SLA (Hegelheimer & Chapelle, 2000).

With these SLA theories I would like to edit and design Video CD news as instructional material, and administer it in a Current English class to find out the essential functions and effectual approach needed for learners focusing on the learning strategies.

Aims

Two questions are posed for the present research.

1. What kind of material does the learners really need in the Current English class?
 - Theme
 - Style
 - Functions
2. What kind of Video CD material is the most effectual for the teachers to produce/edit and administer in the Current English class?
 - Prevalence
 - Simple Procedure
 - Instruction

Methods

Subjects

Twenty-six third-year-grade students in mechanical engineering department, who enrolled in Current English class, were randomly chosen as subjects.

Materials

Two different types of CD-Rom instructional material (Type A and B) were given to the learners and each material was processed for 180 minutes in PC lab.

Type A is Unit one of TOEIC Super Training (ASK, 1998) that has mainly six function to process: listening, reading, movie, conversation, instruction for vocabulary and key-expression including meaning, pronunciation, and examples. Each unit has a mini listening quiz for vocabulary and key expression and mini TOEIC training quiz before proceeding to next unit. Clicking the mouse processes each quiz on the screen.

Type B is Video CD news edited from a copy of the CNN NEWSROOM program to which our university subscribes, showing NASA's research on signs of flowing water at several locations over the surface of the Mars. The Video consists of five parts: Before watching exercise (vocabulary), the first view, comprehension, the second view and listening, and the third view with caption. Each movie is about one minute long and total length of the Video is five minutes thirty seconds long. During the Video watching the attached worksheet (Appendix 3) was given to the students who were allowed to review the contents without caption till they finish the vocabulary, comprehension, and listening quiz. Finally, they are allowed to watch the contents with caption which provides the learners with further listening comprehension. Manual labor work like looking into the dictionary and writing the meaning or translation on the worksheet are required during the exercise.

DV Movie Making

The process mainly consists of three stages: pre-production, production and post-production. In the pre-production stage, the news source was recorded and the script that includes title, vocabulary and notes were provided. In the production stage, the raw video was captured as DV into the PC (PCV-R72, Sony) using the software (DV gate, Sony). Adobe Premiere 5.1 was used to import, assemble, and then, non-linear editing with caption was performed. In the post-production stage, CD Creator (Sony) was used to output moving picture to medium as Video CD (Appendix1). The follow chart of the project with time line is shown in Table 1. The total required time was 210 min, which is acceptable for teachers to create Video CD in their laboratories.

Table 1. The Flow Chart and Time Line of DV Movie Making

Task	Software/Tool used	Time (min.)	Format
1. Convert/Capture Analog into DV	DVgate Motion/PCV-R72 (Sony)	1	DV (AVI)
2. Non-liner edit	Adobe Premier 5.1	40	DV (AVI)
3. Caption superimpose	Adobe Premier 5.1	50	DV (AVI)
4. Video CD edit	CD-Creator (Sony)	60	MPEG-1
5. Video CD output/copy	CD-Creator (Sony)	20	MPEG-1
6. Worksheet		39	
Total		210	

Experimental Procedure

After each task was finished, the questionnaire-I (Q-I) (Appendix 2) was given to the students. Their attitudes during the task were assessed according to their degree of agreement/disagreement with statements using a four-point Likert-like scale. Another questionnaire-II (Q-II) asked about the learners' preference for the topic of Video CD. Analysis is conducted to reveal the tendency of students' attitude. What is the vital function of Video CD for learners' effective practice?

Results and Discussion

Questionnaire-I (Q-I)

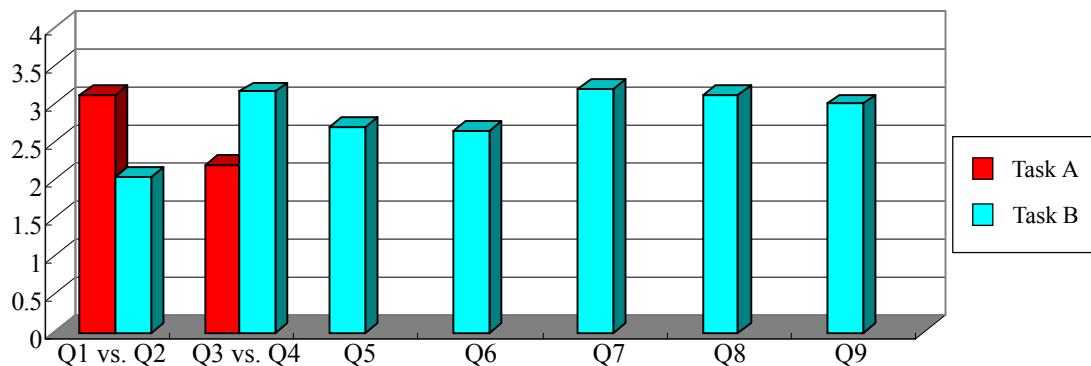
Table 2 and Figure 1 show the result of Q-I. Mean Score 3.04 in Q1 and 2.04 in Q2 indicate that amount of task of Task A is more than Task B. The difference between Q1 and Q2 is statistically significant ($p < .01$). Task A has mainly six functions to process: listening and watching movie, reading dialogues, conversation practice, vocabulary, key-expression and more mini listening and a TOEIC training quiz. Task B has also six functions to process: vocabulary, listening and watching movie, comprehension, listening test, listening and watching movie with caption and translation. Q3 and Q4 indicate that a majority of learners felt that Task B was more interesting than Task A. The difference between Q3 and Q4, which refers to learners' interest, is statistically significant ($p < .01$). The result from Q5 and Q6 can support the claim that a majority of learners can be satisfied with Task B with dictionary use and worksheet. Q7, Q8, and Q9 indicate, in addition, that they think movie caption and CALL are effective, and the latest news may be preferable.

The second direction on Q-I was to explain the reason why they think so. In Q2 some said they overworked with too many well arranged programs, and that too much choice made them less challenging. As for Q5 some prefer to use an e-dictionary on the screen, but a great majority of the class prefer to use a conventional dictionary because it helps keep the memory longer. In Q6 some prefer to run the exercise on the computer, but a great majority of the learners prefer to use worksheet because they can bring it home and review it.

Table 2. Questionnaire-I (Q-I)

Question	Mean	SD		
Q1 Amount of Task A is too much	3.04	.34	Q1>Q2	p<.0001
Q2 Amount of Task B is too much	2.04	.45		
Q3 Theme of Task A is interesting	2.19	.49	Q3<Q4	p<.0001
Q4 Theme of Task B is interesting	3.12	.52		
Q5 Dictionary is useful	2.69	.55		
Q6 Worksheet is useful	2.65	.63		
Q7 Movies with captions are effective	3.19	.40		
Q8 The news should be new	3.12	.52		
Q9 CALL is effective	3.00	.49		

Note: Agree Strongly = 4, Agree = 3, Disagree = 2, Disagree Strongly = 1; n = 26



Note: Agree Strongly = 4, Agree = 3, Disagree = 2, Disagree Strongly = 1; n = 26

Figure 1. Mean and standard deviation for questionnaire-I (Q-I)

Questionnaire-II (Q-II)

The subjects were asked to choose their three most favorite topics of nine items: 1. World Business/Politics, 2. Domestic Business/Politics, 3. World Events, 4. Domestic Events, 5. Science, 6. Space, 7. Environmental Problems, 8. Sports, and 9. Entertainment. The result shown in Table 3 and Figure 2 indicates the learners in engineering department most likely to be interested in science, space and sports.

Advantages and Disadvantages of Video CD (Task B)

As an instructor and a creator of Video CD (Task B), I would like to mention its advantage and disadvantage as follows:

Advantages

1. The script of the news can be obtained from the online news source (<http://www.cnn.com/TRANSCRIPTS>).
2. Video CD is convenient for both students and teachers to handle and process.
3. Format of Video CD (MPEG-1) has lower data rate than other type of formats (AVI or MPEG-2), which means it requires lower storage capacity and output time required is less than others.

The capacity of the present Video CD is about 70 MB.

4. Video CD is flexible for the learning environment (stand alone/ LAN/ Web).
5. The labor of editing Video CD and making worksheet takes less time than making DV material including a digitized exercise.
6. Video CD is easy to install.
7. Task B with Video CD is easy to process/instruct because of simple procedures led by the questions from the beginning to the end, while Task A is mixed up with several tasks without direction.

Disadvantages

1. Small-sized screen
2. Video and sound quality are lower than those of AVI and MPEG-2.

Table 3. Questionnaire-II: Preference for the Topics

	Content	Score
1.	World Business/Politics	7
2.	Domestic Business/Politics	3
3.	World Events	6
4.	Domestic Events	2
5.	Science	<u>14</u>
6.	Space	<u>17</u>
7.	Environmental Problems	8
8.	Sports	<u>13</u>
9.	Entertainment	8

Note: n = 26, Total Score = 78

The statement for advantage indicates that Video CD may be one of learner-friendly, teacher-friendly and environment-friendly material. Moreover, the statements on disadvantage suggest further study for producing DV movie of higher quality and higher performance.

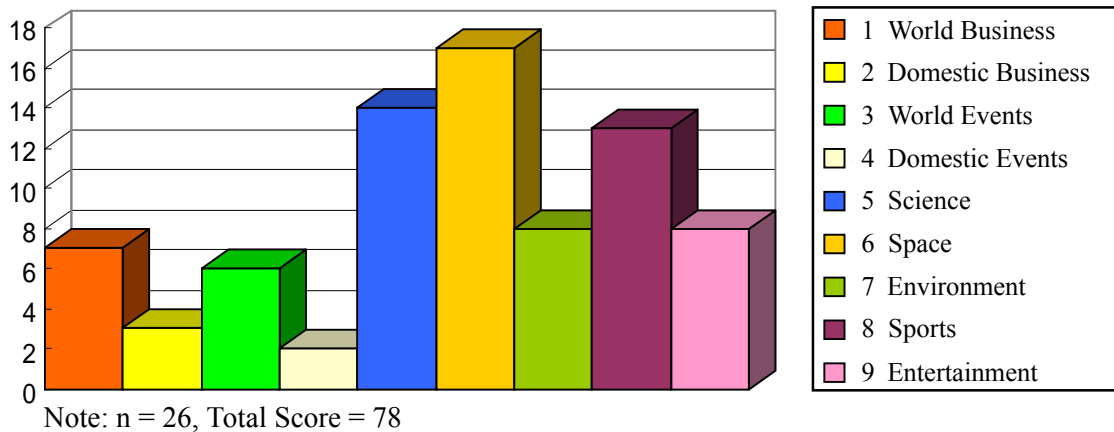


Figure 2. Questionnaire-II (Q-II)

Conclusion

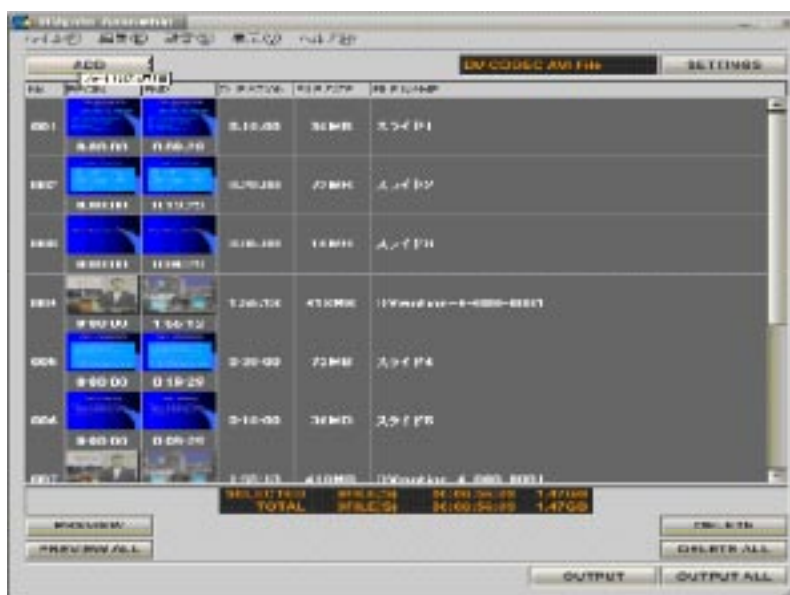
This paper is a proposal to show that even a teacher can create the CALL environment with his/her own teaching material with less work, cost, and time to be taken. The new attempt to combine digital material and worksheet seems to be accepted by the learners. This attempt, editing the news program into a Video CD, aims to find the learners-friendly materials in the Current English class. The learners were interested in its theme and style, that is, digital material with worksheet. Moreover, the present digital material, Video CD (Task B), is likely to seem satisfy the second aim to find teacher-friendly material showing its merits that it is easier to design, edit, output or copy than other DV, for instance AVI format. As Williams and Burden (1997) mentioned, four key elements of learning process, that are the learner, the teacher, the task and the context, are linked together and provide the learners with the characteristic leaning environment. In the present experiment, however, less empirical research on the learning strategy was conducted while the learners are working with the material on both the computers and the worksheets. Psycholinguistic experiment will reveal further evidence how the learners use their learning strategy and how the material affects them when operating. In addition, further research should be also done to find more effective task with higher-quality and higher-performance material using other formats. Further work is needed to apply these methods in research and instruction in order to contribute SLA theory to CALL practice.

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Appendix A

Video CD Assemble



Appendix B

Questionnaire I

Directions: Please circle the number that corresponds to how you feel about each statement. (4 = Agree Strongly, 3 = Agree, 2 = Disagree, 1 = Disagree Strongly)					Score
1. Too many tasks to complete for the TOEIC Training CD-ROM (Task A).	4	3	2	1	
2. Too many tasks to complete for the Video CD (Task B).	4	3	2	1	
3. The theme for Task A is more interesting.	4	3	2	1	
4. The theme for Task B is more interesting.	4	3	2	1	
5. Using the regular dictionary is more effective than using the computer dictionary.	4	3	2	1	
6. I prefer learning from the worksheet rather than from the computer.	4	3	2	1	
7. The images with captions helped further my understanding.	4	3	2	1	
8. I prefer the latest news for Current English.	4	3	2	1	
9. I prefer learning English on the computer rather than in the L. L.	4	3	2	1	

Questionnaire II

Directions: Please choose the three topics that you would most like to learn in this class.				
1. World Business/Politics	2. Domestic Business/Politics	3. World Events	4. Domestic Events	
5. Science	6. Space	7. Environmental Problems	8. Sports	9. Entertainment

Appendix C

Worksheet of Video CD (Task B)

Worksheet-Mars

Date: _____ / _____ / _____

No. _____ Name: _____

Q1. Before watching the movie, let's check the vocabulary.

suspect:	lace (v.):
living creatures:	riverbed:
theory:	significant:
unlock:	prospect:
proof:	doom:
mount:	scoop up:
orbit:	robotic divining rods:
intriguing:	in the wake of:
Martian North Pole:	hunt:

Q2. After watching movie, answer the following True/False questions.

- 2-1. T/F Mars is the fourth planet from the earth.
- 2-2. T/F The surface of Mars cannot be seen in detail from the earth.
- 2-3. T/F Its surface temperature rises to above zero degrees Celsius.
- 2-4. T/F The Mars Global Surveyor took pictures showing signs of flowing water.
- 2-5. T/F Mars is laced with riverbeds that have been dry for a million years.
- 2-6. T/F The Mars Polar Lander analyzed ice crystals just beneath the surface of the South Pole.

Q3. Fill in the blanks of the script and explain the meanings of the underlined words, phrases and sentences.

JORDAN: In today's "Science Desk" extra, a closer look at the fourth planet from the sun. It's Mars. Mars is the only planet whose surface can be seen in detail from Earth. And its surface is more like Earth's than any other planet, but the plants and animals of Earth couldn't live on Mars. The red planet is just too cold. Its surface temperature rarely rises above freezing.

Still, scientists () Mars could have once been home to () ()—a theory supported by a recent discovery. Miles O'Brien explains.

(BEGIN VIDEOTAPE) MILES O'BRIEN, CNN SPACE CORRESPONDENT (voice-over):

Follow the water. Scientists looking to unlock the mystery of life on Mars feel that is the path to, perhaps, living (). And now they may be one step closer.

A camera mounted on a NASA satellite in Mars (), the Mars Global Surveyor, snapped the intriguing (). Researchers say they show very recent signs of flowing water at several locations all over the surface of the Red Planet. This is by no means the first time water has been () on Mars. The () () () is covered with a one-mile-thick blanket of ice. And scientists agree the planet is laced with riverbeds that have been dry for at least a () years. The fresh Global Surveyor images are () because they show signs water may have recently reached the surface, perhaps only days before they were taken.

Scientists are thrilled at the prospects because, at least on Earth, wherever there is () water there is life.

(on camera): The doomed Mars Polar Lander was on that same trail. It was to scoop up and analyze ice crystals just beneath the surface of the South Pole. NASA's efforts to regroup in the wake of that failure last year include several proposals which amount to sending a () of robotic divining rods to Mars in () to come. The new images from the Global Surveyor will make that remote-controlled hunt a lot more precise.

Miles O'Brien, CNN, at the Kennedy Space Center, Florida.

Developing Culturally-Sensitive Teaching Materials for the EFL Classroom in Japan

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Abstract

This paper summarizes research conducted on some EFL textbooks that are published in Japan for university and adult learners of English. The writer found that an overwhelming majority of these textbooks contain misleading cultural stereotypes. For example, many of them give learners the unwarranted notion that most native speakers of English are Caucasian. Near the beginning of the paper, the author shows how such stereotypes are re-enforced by sociocultural factors - in particular, the Japanese media.

The next part of the paper presents numerous examples of stereotypes from specific EFL textbooks, although the author notes, too, that a significant minority of textbooks do attempt to present a more culturally balanced view of native speakers of English. To conclude the paper, the writer suggests principals for developing more culturally-sensitive and accurate teaching materials for Japanese learners of English.

Over the past few years, the number of EFL textbooks produced specifically for Japanese learners of English has proliferated. Tomlinson (1998) views the increase in locally produced EFL textbooks in many countries as a positive remedy to the lack of affect in what he calls "global EFL textbooks." He defines these as textbooks that are mass-marketed to EFL classrooms in various countries. Many EFL textbooks produced for the global market, he contends, lack affective appeal for students because they focus on grammatical structures, which leave "little processing left over for emotive responses and very little to get emotional about" (p. 20). He goes on to say that communicative textbooks, too, produced in reaction against the failure of traditional grammar-translation and audio-lingual publications, offer very little in the way of affect, as they tend to focus on "everyday 'survival' functions" such as buying tickets or asking for directions. These functions, while useful, do little to stimulate emotions, he contends. Locally produced textbooks, asserts Tomlinson, motivate learners, since it is easier to find out what these students are interested in.

While Tomlinson makes a good case for locally-produced textbooks, he cites examples that have worked effectively in Namibia and Norway. He does not look at the issues surrounding the use of locally-produced textbooks in Japan. Unfortunately, it seems that a large number of such coursebooks are grounded on misleading assumptions about what exactly "Western" culture is and how Japanese people should relate to this generic culture. These texts make up a significant proportion of locally-produced materials, which assume that to be a foreigner means to be a "Westerner" (often defined as a white, middle-class American, and occasionally, as a Caucasian Brit, Australian, New Zealander, or Canadian).

Before citing specific examples of questionable stereotypes in locally produced EFL textbooks in Japan, I shall outline the role played by contributing socio-cultural variables--in particular, the Japanese media. The next section of the paper will analyse the stereotypes in some EFL textbooks produced for Japanese university level and adult learners of English. This part of the paper will also give some examples of the minority of textbooks that present various cultures in a more balanced manner. Finally, I will attempt to present some pedagogical guidelines for dealing with the question of cultural bias in many Japanese-produced EFL textbooks.

Sociocultural Variables

Fundamental to considering the matter of cultural balance in EFL textbooks is an examination of the use of stereotypes in such materials. Allport (1954) says, "Whether favorable or unfavorable, a stereotype is an exaggerated belief associated with a category. Its function is to justify (rationalize) our conduct in relation to that category." (p. 191).

It should be noted that if there are indeed stereotypes in locally produced EFL textbooks in Japan, they do not appear out of nowhere, but are deeply influenced by the socio-cultural background of Japan. For example, stereotypes of both foreign and indigenous cultures abound in the Japanese media. NTV was forced to apologize when, in 1994, members of the Ainu, Japan's indigenous group, protested a segment on *Takeshi's Ultra Quiz* that featured a group of comics doing an "Ainu dance" clad in bikini tops and giant phalluses (Schilling, 1997). Moreover, the long-running program, *Naruhodo the World*, where celebrity panelists were quizzed about customs in countries abroad, faced criticism from resident foreigners in Japan, who contended that "the show presented non-Japanese as so many sideshow freaks and their customs as bizarre departures from the Japanese norm" (Schilling, p. 159). The prevalence of stereotypes in the Japanese media may help explain why misbegotten views of non-Japanese cultures also abound in a large number of locally-produced EFL textbooks.

One stereotype that frequently appears in Japan is the glorification of people with Caucasian physical features and the contrasting condescension towards persons of non-Japanese and non-Caucasian origin. In a telling analysis of Japanese anime, Sato (1996) postulates that the predominance of Caucasian physical traits among the supposedly Japanese characters of animated features is a reflection of how many Japanese aspire to look. Such a portrayal of Japanese as Caucasians is not possible in live-action films. Further, Sato quotes fashion illustrator Nagasawa Setsu, "With their sharp-featured faces and long-limbed bodies, Westerners (read Caucasians) are physically suited to the movie screen...." (p. 25) Such thinking, if predominant among the Japanese, might explain why Japanese-produced live-action films take in far less revenue than fare of the same genre imported from Hollywood. Further, this mentality may also be reflected in the disproportionate number of Caucasian characters in EFL textbooks produced for the Japanese market. A former colleague of mine in Tokyo queried a spokesperson for a large publisher in Japan about why so many of this publisher's textbooks were this way. The spokesperson replied simply, "Because they sell here."

The corollary implication to the above assertion by the publisher, of course, is that textbooks featuring characters coming from racial backgrounds do not sell well. I do not have the necessary data to confirm or deny this hypothesis, but if it were true, it would be prudent to look at the underlying reasons. While many Japanese learners of English exhibit a sincere desire to explore beyond the stereotypes of non-Caucasian and non-Japanese cultures, there is still a disturbing view of these peoples that pervades all levels of Japanese society. Discrimination against the large Korean minority in Japan is well-documented. Even though many Korean families have resided in Japan for decades, obtaining Japanese citizenship is extremely difficult for them, and they are thus routinely denied the rights and freedoms enjoyed by Japanese nationals. Caron (1997) charges that Koreans living in Kyoto, a monument to Japanese cultural imperialism which he calls "the urban equivalent of a World's Fair Japanese pavillion" (p. 70), are excluded both from Japanese citizenship and from expressing their Korean identity.

Views of minorities within the United States, Japan's closest ally are often negative, too. Former Prime Minister Yasuhiro Nakasone, in remarks made to Japanese journalists in 1986, claimed that because of its black and Hispanic minorities, the United States was an intellectually inferior society to Japan (Van Wolferen, 1989). Van Wolferen states that only two of the fifty journalists present at this press conference deemed this epithet worthy to report, since Nakasone had previously expressed similar sentiments and "many Japanese share such views." (p. 268) If Van Wolferen's claim is true, it may at least in part explain the aforementioned publisher's assertion that EFL texts having a very high percentage of Caucasian characters sell well in Japan.

A Sampling of Some Textbooks

This research effort does not pretend to be an exhaustive study of all of the available locally-produced textbooks in Japan. Time and practical constraints prohibit this. Instead, a sampling of texts from a few of the many locally-produced EFL textbooks in circulation among university and adult students in Japan will be looked at.

When examining EFL textbooks designed for Japanese university-level and adult learners one notes a common, rather disturbing feature shared by many of them—the fact that in their purported encouragement of students to explore and discuss culture, it is often a Caucasian point of view that predominates. This seems to be particularly true of the larger publishing companies. In the text, *Milestones* (Fuller & Grimm, 1993), for example, a Macmillan publication, Japanese students engage in dialogues with native speakers of English from Canada, the United States, Australia, New Zealand and Ireland. A monocultural view of all of these countries is given, with no corollary attempt to portray or discuss the large populations of racial minorities of these nations.

Another example of this lack of a culturally balanced viewpoint can be found in a text published by Oxford University Press, *Passport* (Buckingham & Whitney, 1995), which is subtitled "English for International Communication." This textbook is aimed at Japanese learners of English who plan to travel abroad and thus will need to use their English in situations commonly encountered by travelers to another country, such as ordering food at a restaurant, asking for directions, and booking a hotel room. The book follows the journeys of five Japanese youths, two of whom travel to the United States, two to Great Britain, and one to Australia. Of thirty-seven conversational interactions that include an illustration, only one of these dialogues involves a non-Caucasian or a non-Japanese character (p. 17). Even though each of the countries to which the Japanese characters travel have a significantly high number of minorities, they are severely underrepresented in this text, with the exception of the above-mentioned interaction, and several figures in the background. For a text purporting to promote "international communication", this seems a major discrepancy.

In fairness to the publishers of *Passport*, I should note that, perhaps in response to the above-mentioned discrepancy, Oxford published a follow-up text, *Passport Plus* (Buckingham & Whitney, 1997) two years after the publication of *Passport*. The five Japanese characters first introduced in *Passport* now interact with characters having a wider variety of ethnic backgrounds, including a Chinese Singaporean man and an African-American woman.

Macmillan, as we have already seen, has published a number of EFL textbooks aimed specifically at the Japanese market. Many of the texts, with scattered exceptions, feature Caucasian characters almost exclusively. One text, *Destination USA* (Craven, 1999), styling itself "a multi-skills course in cross-cultural communication," tells the story of two Japanese students, Hiro and Yuko, who are enrolled in an American college. They interact solely with white Americans. As in *Passport*, minorities are featured only in the background sections of a few illustrations. They do not speak with or interact with the Japanese characters in any way. It would seem that the smaller publishing firms appear to have a fairer perspective with regards to producing more culturally-balanced materials for the Japanese market. Intercom Press, a small company based in Fukuoka City appears to have made an honest attempt to challenge learners' stereotypes of Western cultures.

As an example, *Marathon Mouth Plus* (Shimizu & Gaston, 1999), a textbook billed by the authors as "A Cooperative Multiskills Conversation Text for Large Classes," features a chapter called "Can O' Worms," which challenges students to re-think stereotypes of American, British and Japanese culture, as well as their views on the differences between men and women. This is the first EFL text produced for Japanese students I have ever seen that includes a chapter on stereotypes.

The text, *Natural Speaking* (Thompson & Chase, 1994), also published by Intercom Press, features a range of characters from many countries, including Kenya, China, England, and Norway. An African-American character is also written into a dialogue. This textbook, too, appears to be a step in the right direction, as it shows learners

that English is a language spoken not only among Caucasians in the well-known tourist destinations of the United States, England, and Australia, but also among a diverse range of people in many cultures.

The textbook, *Talk a Lot*, (Martin, 1995), published by EFL Press, a small firm based in Saitama Prefecture, is an example of a text produced by a small publishing company in which the author makes an attempt to show Japanese people interacting with non-Caucasians. While textbooks published by larger firms portray Japanese travelling to the traditional "native English" bastions of the United States, Canada, Australia, England, and New Zealand, this is one of the few texts I have seen featuring Japanese people travelling to Asian countries (in this case, Korea and Thailand) and communicating with some of the residents of those countries in English. The author is presumably trying to show learners that the use of English as a means of international communication goes beyond the traditional five countries previously mentioned.

Some Pedagogical Guidelines

I would now like to suggest a few guidelines for teachers who are serious about choosing appropriate materials that encourage a culturally-balanced point of view among students:

1. Encourage students to move beyond stereotypes presented in certain textbooks and much of the media.

Scarcella and Oxford (1992) outline Hanvey's (1987) four-level taxonomy of cultural awareness. They assert that it is important for students to move beyond Level 1 ("Facts, Stereotypes, and Deficiencies") "and to develop at least a shallow understanding (Hanvey's level 2) and, we hope, some degree of appreciation (Hanvey's level 3) of the other cultures represented in the ESL classroom—not just U.S. culture, but the multiple cultures of the student's classmates from around the world" (p. 187). In Japan, one possible application of this taxonomy could be for teachers to make it a long-term goal for their students to develop an in-depth appreciation of cultures of nations other than those regarded as being the traditional dwelling places of native speakers of English (as well as an appreciation for the ethnic diversity within the latter).

2. Encourage students to question what is written in their textbooks.

This is often difficult in Japan, where the alleged wisdom of textbooks is rarely challenged within the conservative public school system. The university or adult conversation teacher, though, has far more freedom than the public school teacher to help students challenge their cherished assumptions about non-Japanese cultures—assumptions which are often re-enforced by EFL textbooks.

3. Encourage students to pursue their own research about other cultures.

This can be done within the context of a global education curriculum or pursued as a meaningful, communicative diversion from the usual situational/functional fare of most EFL texts. Research indicates that when teachers allow learners to take responsibility for their own learning, providing scaffolding as needed, they become more motivated (Scarcella & Oxford, 1992). One way to encourage student autonomy is to have them do their own research projects on other cultures or nations and present these projects to their classmates in English.

4. Be aware of their own cultural biases.

The author of the text *American Faces, American Lives* (McLean, 1991) while presenting the cultural diversity of the United States in this textbook, admits that before he first came to Asia in 1967, he "rather naively believed that Americans were quite similar." ("Introduction" page). In my view, it is only when we as educators honestly face up to our own biases that we can even

begin to try to teach within a culturally balanced framework. In addition, when we produce our own teaching materials, we would be well advised to scrutinize these biases closely.

5. Avoid being too politically correct.

Representing members from every group in a given society in a textbook in proportion to their numbers within that society is both overly ambitious and unlikely to achieve its goal of pleasing everyone. On the other extreme are textbooks that insert a token minority character and then claim to accurately portray a society of native English speakers. Achieving a healthy balance between the poles of constant stereotyping and political correctness will prove a formidable challenge for even the most conscientious of EFL educators and materials writers.

Conclusion

We have taken a look at a sampling of EFL textbooks produced for Japanese learners. I wish neither to make a blanket endorsement nor a condemnation of any of the texts I have mentioned. Rather, I would like to encourage all of us engaged in the teaching profession to take a balanced world-view in the use of teaching materials, whether they are adopted, adapted, or developed from scratch. It would appear that textbooks produced for ESL learners in the United States have made great strides in the past decades in portraying an ethnically balanced society. By contrast it seems that many EFL textbooks developed for the Japanese market have not been party to the same sort of progress with regards to their portrayal of both traditional native-English speaking nations and others. While some small steps forward have recently been made to this end, it seems that much more needs to be done to achieve a truly international and multiethnic balance in locally-produced EFL materials in Japan.

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Developing Listening Skill Using Video Drama Materials —Focusing on the Improved Teaching Procedure of an English Class—

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Abstract

This paper will explain the improved classroom teaching procedure using video drama materials conducted the 1999 school year at Chiba Institute of Technology. Students are freshmen and sophomores. Class consists about 50~60 students. We met once a week for one semester. One class hour is 90 minutes.

The previous procedure mainly focused on concentrating on listening to every sound or word that could be heard from the video drama materials. The new teaching procedure mainly focused on getting the gist of the whole story. In order to train students to first get the gist of the story and then go on listening further to more precise points, many activities are devised and sequenced in one class hour in the new procedure. The procedure will be explained fully in this paper with various graphs.

The supporting principles in SLA field of this improved classroom teaching procedure using video drama materials are: "importance of motivation," "in-put hypothesis," "comprehensible input," "1+1," "getting the gist," "from top-down understanding to bottom-up understanding," and "importance of activities."

Introduction

In this paper, the writer will explain the teaching procedure of her listening and speaking class in the LL classroom using videotapes.

Situation

The site is Chiba Institute of Technology. Students were

1. Science and technology majors.
2. Low intermediate level of English language.
3. Freshmen and sophomores.
4. Required to take this course.
5. Having little experience of learning listening and speaking skills of the English language.
6. Having experience of studying English by grammar-translation method for six years.
7. Having little experience of visiting the English speaking countries. Some have the experiences of such short visits like traveling or home staying.

Material

For this class, the writer used "Lost Secret 2000" by Robert O'Neill published by Meynard Publishing Company. The characteristics of this material were

1. There are 20 units in the text. Each unit lasts between 4 and 7 minutes.
2. This is a new re-cut version of the “Lost Secret,” a video drama material, produced by the BBC.
3. This is a full-length video drama about the lost secret of the Mepatecs, a South American Civilization. It's a mystery.
4. The dialogue of the drama consists of everyday expressions of the English language.

Problems of the Previous Procedure

I have adopted a new procedure this year. But let me first explain what was wrong with my previous classroom teaching procedure.

The problems that I had noticed were

1. Teacher-talk took too much time. There were too much explanation (in Japanese) by the teacher.
2. The video unit was torn apart and the same bits of part replayed again and again so that students could listen to every sound or word, and that was tedious.
3. Students were forced to listen to the same tiny part many times not having so much of an objective. Class activities were not thoughtfully devised. Students were easily bored with this repetitious and not so meaningful tasks.
4. The time in which the video tape was played was considerably short. Oftentimes students could watch the whole one unit through only once in 2 class hours (90 minutes × 2).
5. The teacher forced the students to listen very precisely and correctly; word by word or every sound. It was rather nonsense.

Changes Introduced to the Previous Procedure

Because of these problems, I have introduced such changes into my listening and speaking course using video tapes and LL classroom facilities. The idea is to let the video drama teach the students by itself not the teacher, and to let them learn by themselves the way they like. Furthermore, students watch the whole unit of the material at least three times for the sake of input hypothesis.

The new teaching procedure of mine is supposed to follow such principles as “importance of motivation,” “input hypothesis,” “comprehensible input,” “1 + 1,” “getting the gist,” “from top-down understanding to bottom-up understanding,” and “importance of activities.” These are the ideas strongly supported in the field of SLA.

Let me explain my new listening and speaking classroom teaching procedure conducted the 1999 school year.

The New Procedure (First Video Viewing)

Before watching the whole unit, teacher asks the students questions as follows;

1. How many scenes are there in the unit?
2. How many people are there?
3. What happened during the unit? What kind of incidents happened?

These are the questions which students can answer from just watching the pictures of the material and not special listening ability is needed. These are warm up questions and are very general ones.

Then the students watch the whole one unit for the first time (first video viewing). And then teacher asks the questions cited above and get the answers. Then teacher summarizes the whole unit broadly such as what has happened and what was in it.

The New Procedure (Second Video Viewing)

Before watching the whole unit again, teacher asks more precise questions as follows;

1. What was on the desk?
2. What was the important information in it?
3. Where did the man go after he left the office?

These are the questions which students can answer from watching the pictures of the material, and some English listening ability is needed.

Then the students watch the whole one unit for the second time (second video viewing). And then teacher asks the questions cited above and get the answers. Then teacher summarizes the whole one unit a little more precisely than the first video viewing such as the secret file was on the desk and the man peeped. These are the small facts and information one can get from watching and listening to the material.

Then the teacher goes on to quick comprehension using the textbook. Students read a short story on the textbook and complete the questions for it. This task is to activate background knowledge for the material. The short story is a summary of the entire unit of the material. There are usually 4-5 questions.

First, the teacher picks some students. They read the story aloud paragraph by paragraph. Then all the students find answers for the set questions, and underline the parts of the story as answers for them. Students write numbers on those parts to match the numbers of the set questions. After that, teacher confirms the answers.

The New Procedure (Third Video Viewing)

Before watching the whole unit again, students are to do some tasks. First one is to complete the conversation. This is the exercise of filling in the blanks while watching the specific part of the material (third video viewing). Students are to listen to important words precisely and write them down in the blanks on the textbook. Students often watch the part twice.

Then students get feedback. Teacher picks some students. They read the conversation aloud with filled blanks. Then teacher confirms the answers. Teacher and students do role play using the completed conversation, reading it aloud. Then 2-3 pairs do the role play again, reading it aloud. After that, students watch the part of the material for the third time.

The New Procedure (Fourth Video Viewing)

Then students are to memorize the set phrase from the complete conversation. Teacher picks some short phrase in it (ex. "How does it work? I don't know this one."), and let students memorize it by reciting it. Teacher uses the repeat-after-me technique. Teacher gives students time to reassure and let them recite the phrase aloud one by one. Teacher picks about 15 students. Then the whole class say the phrase together to reassure.

Next, students write the phrase. Teacher distributes each student a small piece of paper, and students write the phrase without looking at anything. After that, they check with each other. Students who wrote wrongly will practice that part by writing it three times.

Now, students are to look at the back of the textbook, and read the script of the whole unit silently. Then they are to watch the whole unit of the material for the third time (fourth video viewing). Students well understand the memorized phrase and see some important information in the unit clearer this time than they did the first time.

Lastly, comes a round up of the class. The whole class recite the memorized phrase aloud and teacher collects the paper on which students wrote the phrase. These are used to count the students' attendance. Then the class is dismissed.

The Anatomy of the New Procedure (The Structure)

Please look at the graph below (Fig. 1.). It explains the teaching procedure of 1 class-hour activities. There are 9 steps in this procedure.

From the top clockwise,

1. Class begins with 4 minutes of opening, namely get things ready and put global questions to students.
2. Then the first video viewing for 7 minutes, followed by
3. Confirmation of global questions for 5 minutes, and putting the students selective questions, and on to the
4. Second video viewing for 7 minutes. After that,
5. Various activities for 20 minutes, followed by
6. Intensive listening activity of filling in the blanks for 15 minutes. The students will watch the certain part of the unit several times while doing filling in the blanks activity (third video viewing).
7. Then the students will do several confirming activities for 20 minutes.
8. And then the fourth video viewing for 7 minutes. After that,
9. The closing for 5 minutes.

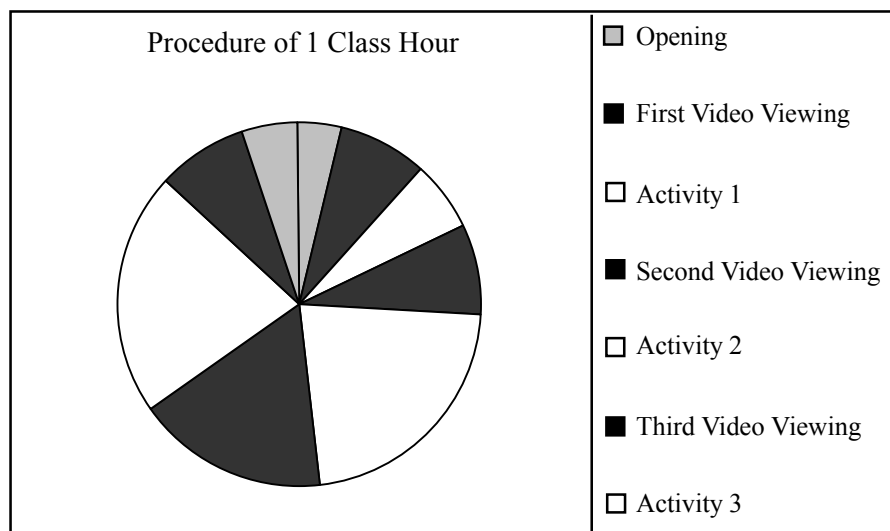


Figure 1. Teaching procedure of one class hour activities

The Anatomy of the New Procedure (Characteristic)

Each video viewing is put in between various set of activities like a sandwich, thus strengthening students' motivation toward watching the unit. The activities are carefully devised from global listening to selective listening, and to intensive listening. The listening objectives move from top-down ones to bottom-up ones, thus confirming one of the supporting principles in SLA field which is "listening ability moves from top-down understanding to bottom-up understanding."

The whole unit is viewed 3 times in 1 class-hour plus several times of watching the short part of the unit. The amount of time watching the material will be up to more than 30 minutes in 1 class-hour, thus confirming the supporting principles in SLA field of in-pup hypothesis.

Comparison of the Scores of Pre-Test and Post-Test

The effects of the changes done on the teaching procedure can be measured by comparing the results of the pre-test and the post-test done at the beginning and the end of the course respectively. For the pre-test, part 1 of the listening test of the second grade Eiken in 1994, spring version was used. Eiken is the test of English proficiency guaranteed by the ministry of education of Japanese government. For the post-test, part 1 of the listening test of the second grade Eiken in 1995, fall version was used. This part of the listening test ask students to choose one correct picture among the four, according to the guidance of the tape-recorded narration or conversation in English. There are 5 questions for part 1 of the listening test of the second grade of Eiken. The ministry of education considers that in order to pass the second grade Eiken, the English language proficiency level of Japanese high school graduate will be needed.

Please look at the scores of the test takers. There is a list of the comparison of the scores taken at the pre-test and the post-test below (Table 1). The perfect score is 5, and the lowest is 0. The percentage of the scorers of each point among the class are shown on the list.

Table 1. Comparison of the Scores

Scores	Pre-test	Post-test	Pre-test	Post-test
5	0	9	0	16
4	5	16	11	29
3	18	20	39	36
2	18	7	39	13
1	5	4	11	7
0	0	0	0	0
Students	46	56	100%	100%

Perfect Score = 5

Let us look at this on the graph. Please look at Figure 2. The scorers of the pre-test is shown in pale gray pillars. The scorers are greatly crowded on point 2 and 3. The scorers of the post-test is shown in black pillars. The scorers are crowded on point 3, 4, and 5. The perfect 5 was taken by 0 student in the pre-test which is 0 %, whereas it was taken by 9 students in the post-test which is 16% of the whole class. Point 4 of 80% correctness was taken by 11% students of the whole class in the pre-test, whereas it was taken by 29% students in the post-test. This is a great growth. The scorers above 80% correctness are 11% in the pre-test, and 45% in the post-test. Please watch the top of the mountains of the scorers of the graph. There is a difference. Post-test scorers are gathered on higher points.

In choosing one correct picture among the four according to listening to the narration or conversation in English on the tape, there is a big difference before and after the students joined this course.

Surveillance of the Questionnaire

Also, teacher can listen to the students' voices directly through the questionnaire which has been done on the very last day of the class.

There were 7 questions on the questionnaire; 4 are yes-no questions, and 3 are open-ended questions. Among the 3 open-ended questions, 2 were the essay type questions. Question no.3 asked the students what kind of changes were made on their understanding of the video drama through watching the unit 3 times in each class-time. Almost all the students answered that the understanding has developed from a global one to a more precise one, which is precisely what the teacher aimed. Question no.4 asked the students what kind of activity they liked most among the various ones they did in one class-hour. The answers were diverse. 22 students liked watching the material itself and this was the biggest number. This is precisely what the teacher aimed at and is the most important activity among others. 24 students liked bottom-up activities as memorizing, reciting, and writing the phrase or filling in the blanks that are done at the latter half of the class-time. The class activities are supported both on bottom-up ones and top-down ones, which means students did very well on both of them. This implies that the principle of "From Top-down Understanding To Bottom-up Understanding" is successfully accomplished by the students.

The other questions, no.1, 2, 6, and 7, mainly asked whether the students liked this course or not; to which almost 100% students answered "yes." This was rewarding on the part of the teacher. The other question, No.5, asked the students the reasons why they liked such and such activities and the results are on the Appendix 1. Please look through Appendix 1.

Thank you very much for your careful attention to this paper.

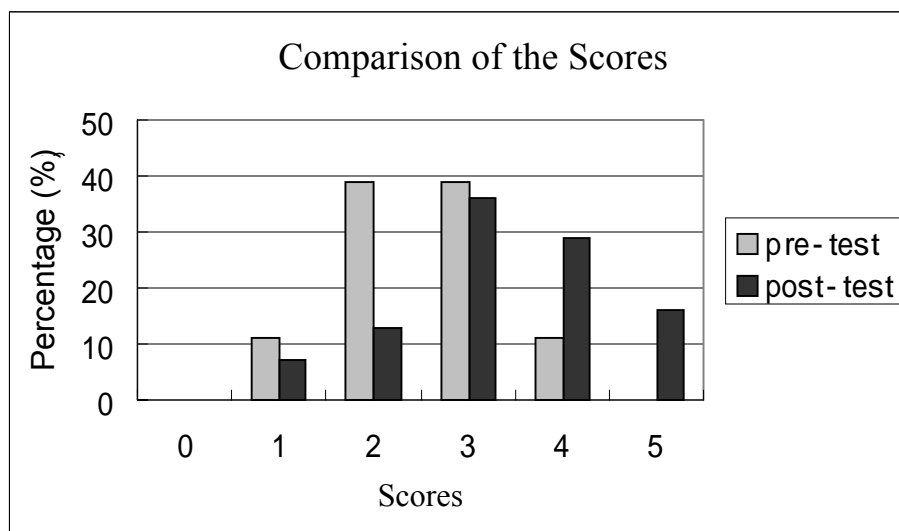


Figure 2. Comparison of the scores

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Appendix

The Results of the Questionnaire

	Yes	No
1.	53	2
2.	50	5
6.	21	34
7.	52	3

3. — While watching the video three times, things that have been obscurely understood gradually become very clear in my mind. By changing objectives every time, scopes of watching the video have changed, and I have become aware of what was in the video with confidence.

— I could just watch and think about what was in the video in the beginning. By watching the video three times, I have gradually become able to listen to the English language, and finally I have become able to listen out the language almost all the time.

— I could study English as conversation, not as sentences. I have become used to listening to English and saying it aloud in class.

— I understood the video by just watching it in the beginning. By watching the video three times, I have become able to listen to English lines bit by bit.

5. The name of the activity you liked most

Watching the video	22
Filling in the blanks	15
Memorizing, reciting, and writing the phrase	9
Listening test (Eiken)	4
Global, and selective listening (Q&A)	2
Dictation test done at the final test	2
Reading the script	1

a. Watching the video (reasons)

— Studying English language by watching the video drama was the first experience for me, and it was exciting. I may not understand the language in the beginning, but while watching people's way of speaking or their facial expressions carefully, I would gradually understand what they are talking in the video, and that was very interesting.

— It was the first time for me to watch a video drama as a material for an English class, and it triggered me for coming to this class. I really wanted to talk in English myself. I strongly wanted to talk in English.

— I felt that this story was interesting so that I wanted to watch the next unit very eagerly each time. I always thought, "Oh, what will happen next?"

b. Filling in the blanks (reasons)

— I could try myself to find out how much I could listen to the English language and that was fun. I hated to become a loser, so when I couldn't fill in the blanks, I felt so disappointed and irritated.

— Even though the part seemed very difficult to listen to, if I hear very carefully, I actually can follow, and that was an interesting experience for me. Saying many words aloud was a good practice for me.

— By watching the part of the video three times, I became able to understand English language, and since I dare not miss listening to the part, there was a fitting tension and concentration during the activity, and I liked that.

c. Memorizing, reciting and writing the phrase (reasons)

— I could try myself to find out how much I could memorize English sentences. I could also review simple vocabulary and its spellings and meanings which I learned in my junior high school days.

— We repeated short sentences again and again until we all memorized it. After that some students were picked to recite one by one. When the chance came to me, it was so thrilling to recite that short sentence successfully without any mistake in class. It was a feeling of pleasure.

Development of a Multimedia Program for the Acquisition of Noun Phrase with Restrictive Modifier

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Abstract

The noun phrase with restrictive modifiers (hereafter NP/RM) is the most difficult syntactic structure for Japanese learners of English. The reason is that NP/RM is not properly introduced as the restrictive modifier to denote the specific object or objects among several objects, but that the function of relative pronouns preceding the modifiers are stressed too much. As a result, most Japanese learners of English consider NP/RM simply as two combined sentences with a relative pronoun as a copula. The fact that in Japanese language the modifier precedes the nouns it modifies makes the acquisition of English NP/RM more difficult for Japanese learners of English. Kodama and= Fujikake formulated the optimal learning sequence of NP/RM and have produced multimedia programs which enable learners to acquire the NP/RM syntactic structures. This paper shows how the multimedia programs are conducted and how the learners acquire the NP/RM syntactic structures with them.

Introduction

Many surveys have shown that *relative pronoun* is one of the most difficult grammatical items for Japanese learners of English. The authors have supposed that the cause lies in how *relative pronoun* is taught in Japanese English classes. The procedure introduced below is typical of the way that *relative pronoun* has been taught in Japanese English classes.

An English teacher shows a photo to the class. Now we suppose this teacher is male. He may write on the blackboard, "This is a picture." Then he explains that he took the picture the day before. He writes on the blackboard, "I took it yesterday." Next, he will underline 'it', and ask which word in the first sentence 'it' represents. He calls one of the students to answer. The student will answer that 'it' represents 'picture.' Then he starts to explain that two sentences can be combined into one by using 'which'. First he replaces 'it' with 'which', and then moves it to the beginning of the sentence "I took.....", and forms a new sentence "This is a picture which I took yesterday." He may proceed to an example such as "This is a girl. I met her yesterday." to introduce *whom* as another example of relative pronoun.

The clause led by a relative pronoun is actually an adjective clause and its function is to modify the noun preceding the clause, which is grammatically called *antecedent*. The word 'modify' is translated into Japanese as 'shushoku-suru' and English teachers always use this Japanese to explain about the function of the clause led by *relative pronoun*. However, many English teachers are not aware of the true meaning of 'modify', which is not reflected in its Japanese translation.

Here are the definitions of 'modify' quoted from three dictionaries. (Only the appropriate parts are quoted.)

Webster's New World Dictionary:

3. *gram.* to limit the meaning of

Collins COBUILD English Dictionary:

2. a word or group of words that modifies another word describes or classifies something, or restricts the meaning of the word.

Longman Dictionary of Contemporary English:

2. (of a word, esp. an adjective or adverb) to describe or limit the meaning of (another word)

What is common to all these definitions is to *restrict or limit the meaning of another word*. In the first place, the function of adjective or adverb is to limit the meaning of another word. The definition of *adjective* in *Webster's New World Dictionary* illustrates this fact.

1. Any of a class of words used to limit or qualify a noun or other substantive
2. Any phrase or clause similarly used.

However, the Japanese equivalent 'shushoku' does not have the connotation of 'limit' or 'restrict'. The connotation of 'shushoku' is to decorate or add something extra to the word which it 'modifies'.

In this context, many Japanese teachers of English may not be aware that the clause led by a relative pronoun is a kind of adjective clause, whose function is to limit or restrict the word it modifies. That is why the grammatical term *relative pronoun* is more often used and more conspicuous in English classes in Japanese schools than *adjective phrase or clause*. And very often *relative pronoun* is introduced and taught without relation to other kinds of restrictive adjective phrase or clause such as a prepositional phrase, present participial phrase, past participial phrase, and adverbial clause.

Every language has a word, phrase and clause, which can be classified as *adjective*, whether it is put before or after the word it modifies. And the function of the adjective and/or the function of the modification are to limit the meaning of the word it modifies. But then what does it mean to limit or restrict the meaning of the word it modifies? In this world there exist an infinite number of things. When human beings recognize the existence of those things, they have to give them their unique names. Otherwise they would not just exist. However if human beings had to give names to each of the limitless existing things, they need the infinite number of words, which they have to learn or memorize. The capacity of memorization or the storage area for memory in the brain is limited. It is not possible for human beings to learn or memorize the infinite number of words.

So every language has come to have the mechanism of grouping or classifying the things that have the common feature or characteristic, and give each group the same name. To give a simple example, a group of animals that is named 'dog' shares a common characteristic, which can be called 'dogness'. It differs distinctly from another group of animal, which is named 'cat'. However in the group of 'dog', each dog has distinctive features differing from other dogs. To differentiate the group of dogs that have distinct features, these group of dogs are given their unique names such as dachshund, terry, shepherd and so on and on. Or if a dog is kept as a pet, it is given its own unique name. This unique name is grammatically defined as *proper noun*. Many objects, especially animate things and almost all human beings have their own proper names. The number of proper nouns is almost infinite.

If we must call an object by its unique name to refer to it, we have to know the unique name of every object. It is not possible because our memory capacity is limited. Therefore every language invented a mechanism to restrict the reference to only one object. It is the restrictive modifier. And there are two kinds of restrictive modifiers; one is the post-modifier and the other is the pre-modifier. Japanese language has the pre-modifier

system. English has the post-modifier system. This difference is supposed to cause the trouble when Japanese English learners learn the restrictive modifiers. We do not suppose that this difference does not cause much trouble in learning restrictive modifiers, but the ways they are taught in Japanese English classes makes it difficult for Japanese English learners to acquire them.

As illustrated before, the typical way of introducing *relative pronoun* in Japanese English classes does not employ the strategy to present the situation that enables or obliges the use of restrictive modifiers to designate only one thing. It has not been possible to present this kind of situation with text-based instruction, or even with primitive audio-visual methods. But the advent of multimedia presentation with computers enables the presentation of the appropriate situation that necessitates the use of restrictive modifiers. Kodama and Fujikake have developed multimedia programs that enhance the acquisition of restrictive modifiers based on our preceding linguistic research on the strategy of restrictive modifier acquisition.

Optimal Learning Sequence

We can formulate the optimal learning sequence for the acquisition of noun phrases with restrictive modifier (NP/RM), as shown in Table 1.

Table 1. Optimal Learning Sequence for the Acquisition of NP/RM Construction

NP/RM	Description	Question	NP/RM Construction
1	This N is Adj.	Which N is Adj?	The [Color] N.
2	This N is Adj.	Which N is Adj?	The [Color] N.
3	[NAME]'s bag is prep the N.	Which bag is [NAME]'s?	The bag prep the N.
4	This N is Adj-er than this one.	Which N1 is Adj-er?	The N1 prep the N2.
5	This N is Adj-est.	Which N1 is Adj-est?	The N1 prep the N2.
6	[NAME] is wearing [CLOTHING].	Which girl/boy is [NAME]?	The girl/boy wearing [CLOTHING].
7	[NAME] is Vt-ing NP.	Which girl/boy is [NAME]?	The girl/boy Vt-ing NP.
8	[NAME] is Vi-ing prep NP.	Which girl/boy is [NAME]?	The girl/boy Vi-ing prep NP.
9	[NAME] is VP-ing	Which girl/boy/woman is [NAME]?	The girl/boy/woman VP-ing.
10	[NAME] is going to VP.	Which girl/boy is [NAME]?	The girl/boy who is going to Vt NP.
11	[NAME] has just Vt-en NP.	Which girl/boy is [NAME]?	The girl/boy who has just Vt-en NP.
12	[NAME] is VP-en.	Which girl/boy is [NAME]?	The girl/boy who is VP-en.
13	[NAME] is Vt-ing a [DOG].	Which dog is a [KIND OF DOG]?	The dog (which) [NAME] is Vt-ing.
14	[NAME] is Vi-ing prep NP.	Which N is Adj-er?	The N [NAME] is Vi-ing prep.
15	[NAME] is Vt-ing NP prep NP	Which N is Adj-er?	The N [NAME] is Vt-ing prep
16	NP is Vt-en PP.	Which N is Comp?	The N VT-en PP.
17	NP VP.	Which dog is a [KIND OF DOG]?	The dog Modifier.
18	[NAME] VP	Which girl/boy is [NAME]?	The girl/boy Modifier.
19	NP VP.	Which N is Comp?	The N Modifier.

The fourth column in the Table 1 shows the syntax of NP/RM to be learned. This sequence shows that learners learn the syntax of NP/RM from the easiest one *The [color] N*, which is shown in the right-top row, to the most generalized one *The N Modifier*, which is shown in the right-bottom row. The phrases in the second and the third columns are the ones to be used to introduce the NP/RM constructions as shown in the rightmost column. The phrases in the second column are the description about the objects used in each section and the phrases in the third column are the questions to introduce the NP/RM constructions. We ask learners the questions beginning with *which N* so that they pick up the specific one among the same kind of objects with a restrictive modifier. The nouns to be restricted are definite nouns such as bags, girls or boys, or dogs at the beginning stages and are generalized to other nouns at later stages.

Based on this sequence, we have produced nineteen multimedia programs to visually present the situations in which the sentences with NP/RM should be used to denote the specific object or objects, using the Asymetrix Tool Book II, *Instructor 6.0* software.

Multimedia Programs

Our NP/RM multimedia programs are incorporated into *My World Series*, multimedia English learning curriculum developed by Fujikake. Each program consists of four sections; presentation, questions & answers, reading comprehension, and composition, simulating the curriculum format of *My World Series*. Since they are part of *My World Series*, the nouns, phrases or syntax used in the NP/RM programs are also used in the other parts of *My World Series*; some of them are learned in advance before learning one program of NP/RM and some of them are used after learning in one program of NP/RM. They are related in intricate way in *My World Series*. A specific feature of NP/RM programs is that there are eight characters who are two Japanese girls, two American girls, two Japanese boys and two American boys, named respectively Yuki, Kayo, Mary, Nancy, Koji, Taro, Bill, and Jim. They often appear on the screen of the computer.

Now we will show some programs, NP/RM 3, NP/RM 9 and NP/RM 13, from among nineteen NP/RM programs and illustrate how learners can learn NP/RM constructions with these multimedia programs.

NP/RM 3: postmodification by prepositional phrases



Figure 1



Figure 2

The programs of NP/RM 1 and NP/RM 2 are aimed for learning noun phrases restricted by premodifiers and NP/RM 3 is the first program for learners to learn noun phrases with restrictive postmodifiers. In this program, all of the head nouns of noun phrases are *bag* to make the learners' learning less complicated and postmodifiers are limited to prepositional phrases. Eight characters' bags are placed somewhere in the room, as shown in Figure 1, and learners learn how to designate each bag with a restrictive modifier specifying its location. The prepositional phrases needed to describe its location have been learned in other programs in *My World Series* before taking this program.

The program starts with the presentation section. One of eight characters and his/her bag appear on the screen as shown in Figure 2 and the learners are informed of where her/his bag is; in this case “*Yuki’s bag is on the armchair.*” Then this picture fades out and another character and his/her bag appear, and they are informed where his/her bag is. In this way, eight characters and bags are presented successively, along with the information about the locations of their bags. After the presentation of all eight characters and bags, the learners may try this presentation once again if they want, and as many times as they like until they understand.

Then the learners proceed to the questions & answers section. In this section, the picture Figure 1 is presented and the learners are asked a question such as “*Which bag is Yuki’s?*” Soon the picture is transformed to the picture like Figure 3 in which only Yuki’s bag is clear and the other bags are dimmed so that the learners can find which bag is Yuki’s. Since it is a novel question to them, they don’t know how to answer it, even if they know they can specify it by adding their location somehow. Then the learners click the ‘Confirm’ button at the bottom of the picture and can learn how to specify it. They listen to the answer as many times as they like, try to answer it by themselves and then advance to the next question by clicking the ‘Next’ button. There are eight bags of eight characters, and therefore they take eight exercises of this kind. By the end of this section, they are supposed to grasp the syntactic structure of noun phrases with restrictive prepositional postmodifiers.



Figure 3

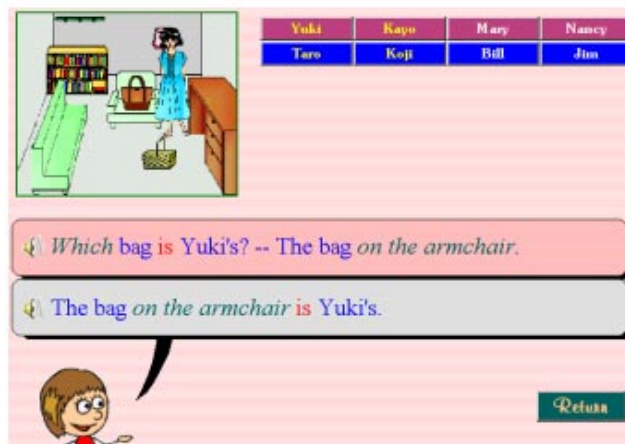


Figure 4

After the questions & answers section, the learners advance to the reading comprehension section to gain a clearer command of this construction, as shown in Figure 4. The learners are presented with two sentences at first. If they click anywhere in the sentence fields, the picture representing the situation described by that particular sentence appears. If they click sound marks, the sentences are read aloud. With the help of a picture and sound, the learners read the description of the bag, and when they have read it, they proceed to another character’s bag by clicking one of the names listed at the top of the screen.

After that the learners go on to the final section; composition section. This section is designed for the learners to acquire the target construction by composing sentences and typing them by themselves. On entering this section, the picture as shown in Figure 5 is presented on the screen and the learners are asked a question like “*Which bag is Yuki’s?*” Soon the picture is changed to the one as shown in Figure 6 in order to show the location of Yuki’s bag. Since they have taken many exercises in the previous sections, they are expected to compose and type the sentence such as “*The bag on the armchair is Yuki’s.*” in the blank field. But if they are not sure how to answer it, they can hear the answer by clicking ‘HINT1.’ If they do not know the spelling of a word, they click ‘HINT2’ and a list of words appears. With the help of these hints, the learners compose the sentence, type it and click the ‘done’ button. When the sentence they typed is correct, the ‘OK’ sign pops out with the sound of a fanfare and they proceed to the next picture. When there are any mistakes, the ‘Try Again’ sign appears with the sound of ‘boo.’ They correct errors until they get the ‘OK’ sign. In this way, they answer eight questions about eight characters’ bags and grasp the syntactic structure of the sentences with NP/RM 3.



Figure 5



Figure 6

As we said before, this program is incorporated in *My World Series* and four sections of the program are arranged among other programs of *My World Series*. Therefore these exercise presented above are not offered at one time but provided at a certain interval.

After this program, NP/RM 4-5 programs where the heads of noun phrases are expanded from *bag* to common nouns are followed and similar learning as shown above is conducted in a different situation.

NP/RM 9: Postmodification by Present Participle Clauses

The programs of NP/RM 6-9 deal with noun phrases whose heads are postmodified by *-ing* participle clauses. In NP/RM 6, which is the first program of this sequence, the *ing* forms in postmodifying clauses are exclusively *wearing* and then they are expanded to *Vt-ing* in NP/RM 7 and *Vi-ing* prep NP in NP/RM 8 and generalized to *VP-ing* in NP/RM 9. I will show the program of NP/RM 9 here.

In this program there are two women other than the familiar eight characters, as shown in Figure 7. Five persons out of ten are doing something described by a transitive verb and the other five persons are doing something described by an intransitive verb. First, in the presentation section, ten persons appear one by one with an animated motion on the screen. The learners are informed of what he/she is doing, such as 'Tom is spinning a top.' (see Figure 8.)

They have learned the progressive syntactic structure in the earlier stage of the curriculum before taking this program.



Figure 7

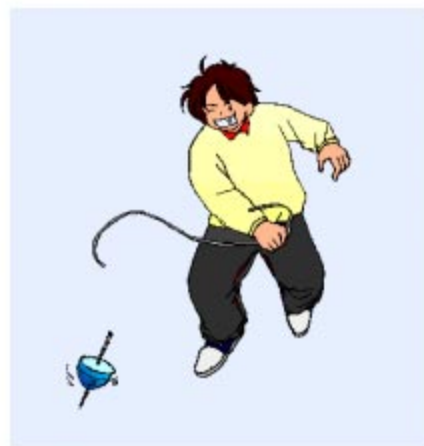


Figure 8

After listening to all of the descriptions about what the person is doing, the learners go on to the questions & answers section. They are presented with the picture Figure 7 and asked a question such as “Which boy is Taro?” Soon after that the picture on the screen is turned into the one where only Taro is clear while the other part is dimmed, so that the learner can find which boy Taro is. The learners are expected to answer ‘The boy spinning a top.’ They answer ten questions in all about ten persons, listening to the answer or making sure if their answers are correct by clicking the ‘Confirm’ button as in the previous sections.

Ing-forms in postmodifying clause do not always correspond to the progressive forms, as the fact shows that stative verbs, which cannot have the progressive in the finite verb phrase, can appear in participial form such as in the example ‘It was a mixture consisting of oil and vinegar.’ However, it is also true that they correspond to the progressive forms bearing progressive meaning in many cases. We assume here that the situation the person is restricted by *-ing* participle clauses with the progressive meaning is the most natural guide to introduce postmodification by *ing* participle clauses.

After the questions and answers section, they advance to the reading comprehension and composition sections. In the composition section, the learners are asked questions such as “Which boy is Taro?” and are expected to compose sentences like ‘The boy spinning a top is Taro.’ in the blank field. Taking ten exercises of this kind, they come to acquire the syntactic structure of the sentences with noun phrases whose heads are postmodified by present participle clauses.

NP/RM 11: Postmodification by Restrictive Relative Clauses

NP/RMs 10-15 are designed for the learning of noun phrases restricted by relative clauses. It is widely admitted that the relative clause in which the relative pronoun functions as subject is easier to acquire than the one in which the relative pronoun functions as object. Therefore in our programs the relative pronouns are subject in NP/RMs 10-12 and the relative pronouns are object in NP/RMs 13-15. Moreover, in order to make the learners feel it is less complicated, the first two programs NP/RM 10 and NP/RM 11 use the same verb phrases, which are different in tense; future tense in NP/RM 10 and perfect tense NP/RM 11. They have learned verb phrases and both tenses in the preceding programs of *My Life Series*. Figure 9 and Figure 10 represent the situations of NP/RM 10 and NP/RM 11 respectively.



Figure 9



Figure 10

The programs for postmodification by relative clauses are also conducted roughly the same way as other programs illustrated in the previous sections. Figure 11 is one of the presentation scenes of NP/RM 11.

Kayo shows up with an animated motion on the screen, accompanied by the narrations such as;

Kayo is going to do the dishes. / Now she is doing the dishes. / She has just done the dishes.

After this kind of presentation, the learners go on to the other three sections. The learners are presented Figure 11 and asked a question such as “*Which girl is Kayo?*” They compose a sentence such as “*The girl who has just done the dishes,*” or “*The girl who has just done the dishes is Kayo,*” looking at the picture where only Kayo stands out on the opaque background. The hints prepared in the program help the learners when they are not sure how to answer the questions. The learners have taken exercises in making noun phrases and sentences with some kinds of postmodifications so far and it is highly likely that they have been used to the structure of postmodification by this time. Once they find the need of relative pronouns after the head nouns, it would not be difficult to compose the noun phrases postmodified by relative clauses and sentences with them.



Figure 11

Summary

We have illustrated some programs and shown how the learners acquire the syntactic structures of post restrictive modifiers with these programs. Human beings have the innate language-acquisition ability. On the basis of the sentences that he/she has heard, every human child can construct a set of rules for creating and understanding new sentences. Our multimedia programs offer proper situations for the learners to learn and use the sentences, finding the rules by themselves by using their own innate ability.

Development of an Automatic Pause Controller: What We Can Learn by Controlling Speech Rate and Pause Length*

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Abstract

The authors developed a RIFF file editor, which can automatically control pause duration in speech with high precision, and used it to conduct a series of experiments, in which the naturalness of compressed and expanded speech was assessed by L2 learners. Our findings in the experiments were a) when Intra-WP was controlled, the naturalness of listening materials dropped very significantly, b) Inter-WP with a range of 50 to 80 msec was evaluated as very natural, and c) SUP (Sense Unit Pause) remained natural even when prolonged for lengths up to 500 msec.

Introduction

Adult speakers talk slowly to young children so that the children can easily understand what they say. The authors' previous research shows that pauses are far more prolonged than the words themselves (Kitamura, et al., 1997). If slightly prolonged pauses can truly contribute to aural comprehension of L2 learners, listening materials may be produced that retain the authenticity of the original and yet provide learners with the ease in learning due to the prolonging pauses.

Controlling pauses, however, could deteriorate the naturalness of speech. The conflicting results of the previous research, in which the effect of mechanically or manually controlled speech on listening comprehension was examined, might reflect this deterioration (Kano & Saito, 1997; Kanzaki, et al., 1995; Machida, et al., 1981). In addition, pause control in previous literature does not always seem to be accurate due to technical limitations caused by analogue consumer recording devices.

In this paper, therefore, we report on a) the development of a highly reliable automatic digital pause controller, and b) the assessment by L2 learners of the naturalness in speech whose pauses are controlled by using the controller mentioned above.

*This research was conducted in part under the support of the Kansai University Grant-in-aid for Joint Research provided to the first author in the year of 2000. The authors would like to express their appreciation to Osamu Takeuchi, an associate professor at Kansai University, for his assistance in preparing this paper.

Pause Detection and Types

Definition of Pauses

No agreement has been reached on the definition of pauses. Some argue that a pause is a silence of more than 220 msec duration, and others maintain that a silence should be more than 250 msec (e.g., Boomer and Dittman, 1963; Eisler, 1968; Kohno, 1992; Tomita, 1995). In this paper, a pause is defined as a silence of more than 10 msec duration within ± 10 bit range (See Fig.1 (a)). Any sounds of less than 5 msec duration within the silence are excluded as spike noises (See Fig.1 (b)).

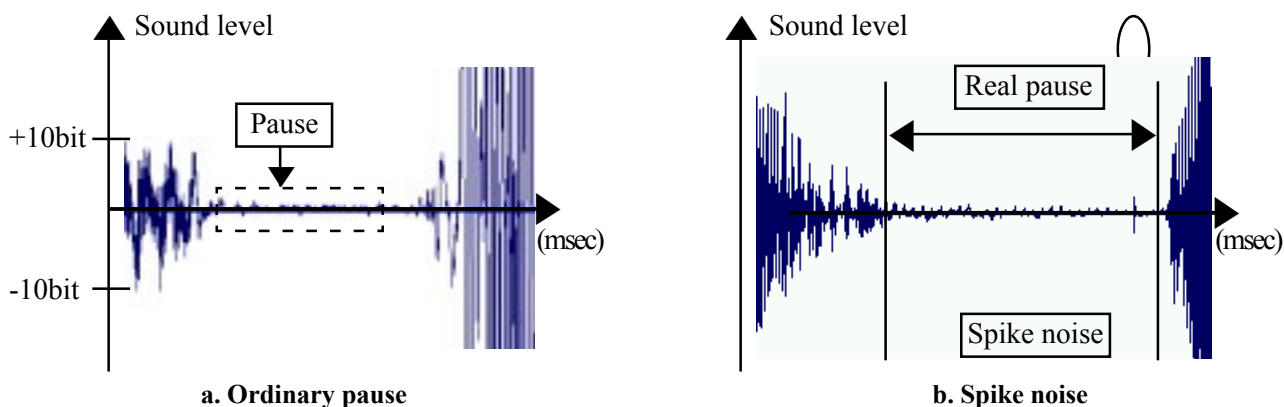


Figure 1. Examples of pauses

Procedures for Digitization

Speech in our experiments was digitized (16 bit at the max sound level of 90.3dB) into a RIFF file by using *Sound Forge XP 4.0* (with a sampling rate of 44.1 KHz, which is of music CD audio quality). Conventionally, pauses in speech have been discussed based on a precision of 100 msec. When digitized at a sampling rate of 44.1 KHz, however, digitized speech can be analyzed with a precision of 0.02 msec. This precision can provide the language teaching community with a new horizon.

Figure 2 shows an example of a pause (approx. 15msec) detected by the automatic pause controller the authors developed.

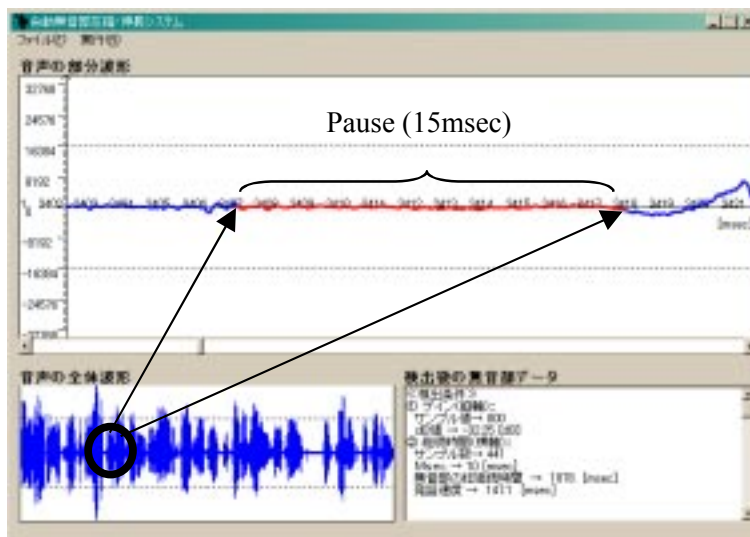


Figure 2. Automatic pause controller screen

Figure 3 is an example of actual measurement of pauses in speech based on the definition described above.

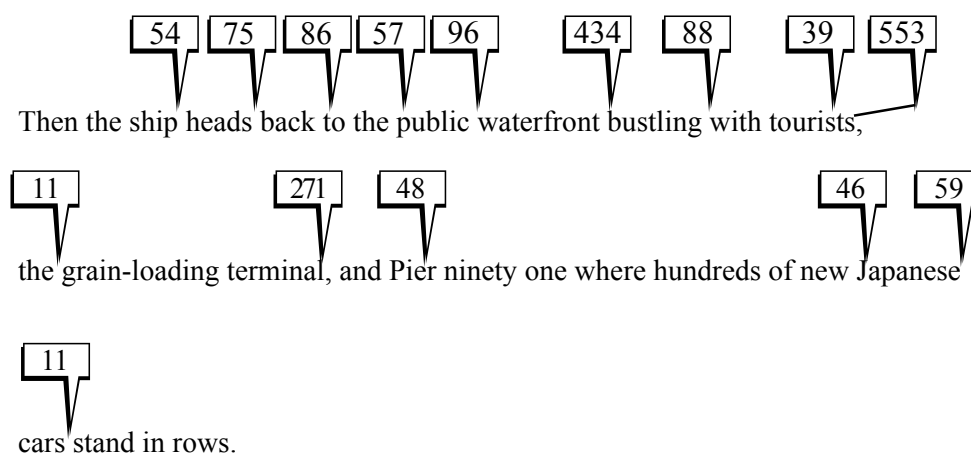


Figure 3. An example of actual measurement of pauses in speech (unit: msec)

Types of Pauses

Three types of pauses were controlled in our experiments:

1. Intra-word pause (abbreviated as Intra-WP), pauses within a word, which generally ranges from approximately 10-70 msec.
2. Inter-word pauses (abbreviated as Inter-WP): pauses between two consecutive words, which generally range from approximately 30-100msec.
3. Sense-unit pauses (abbreviated as SUP): pause between two consecutive words whose duration is over 125msec.

Experimental Conditions

Subjects

Approximately 130 college students took part in this series of experiments. The number of the subjects in each of the experiments differed only slightly.

Materials

A female narrator voiced-over a sentence at a slow speed (141.2wpm), and a male narrator voiced-over the same sentence at a normal speed (187.9wpm). There were two SUPs in the sentence, and their duration was 381 and 305 msec each. Both the voice-over parts and the pauses were uniformly controlled on a time scale from 55% to 145% with increments of 15% for Experiment 1.

For Experiments 2 and 3, both contracting and prolonging durations alone in the recordings controlled all three types of pauses in the recordings. The speech parts are not at all controlled. In other words, the voiced parts are completely intact although their ambient pauses are either shorter or longer than the original.

Procedure

The subjects were instructed to judge the naturalness of each controlled speech recording and evaluated the materials using a scale from 1 (very unnatural) to 3 (very natural) in Experiment 1. In the other experiments, another scale from 1 (very unnatural) to 5 (very natural)

Experiments

Experiment 1

In this experiment, the entire speech was controlled. The subjects listened to 7 versions (differing in speech rate) of the slow and the normal voice-overs respectively. Figure 4 shows the result of the subjective evaluation of the naturalness of the controlled speech. They judged controlled recordings with speech rates ranging from 141.2 wpm through 221.1wpm. BBC broadcasting and daily conversation speed fall in this range. We can say from this experiment, even nonnative speakers of English can judge the naturalness of speech in terms of speech

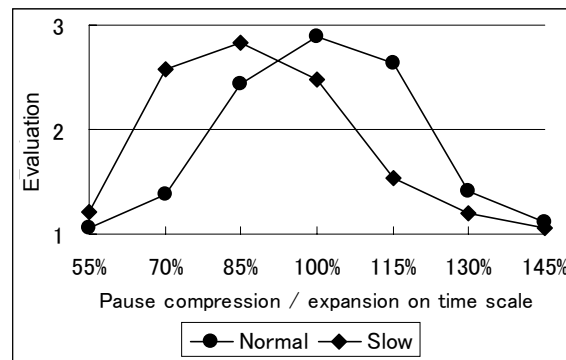


Figure 4. Controlling speech rate

Experiment 2

In Experiment 2, only pauses (not the voice part) were controlled according to the following rules:

1. To control all the pauses with fixed durations from 50msec to 400msec.
2. To control Inter-WP alone with fixed durations from 50msec to 500msec.
3. To control SUP alone with fixed durations from 50msec to 500msec.

From Figure 5, we can learn that controlled speech with all three types of pauses replaced with fixed durations rapidly deteriorates in naturalness when the replaced pauses are more than 100 msec in length. A similar trend was detected when the Inter-WPs alone were controlled in the same way as in Figure 6. However, SUPs are highly tolerant towards naturalness deterioration even when they were replaced with 500msec pause in Figure 7.

Experiment 3

To investigate the properties of all types of pauses further, Experiment 3 was conducted with a higher resolution of 20msec. A resolution of 50msec was used for the previous analysis (Fig. 5 - Fig. 7). Subjects in this experiment were divided into three proficiency groups based on the scores of TOEFL.

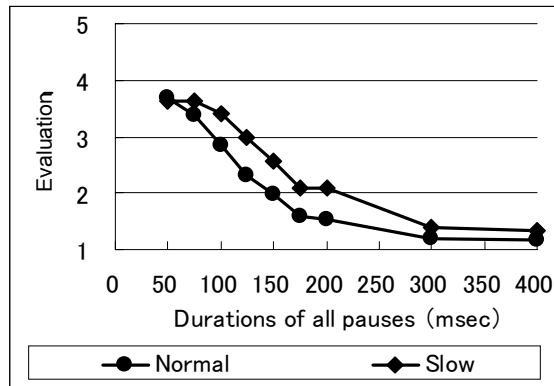


Figure 5. Controlling all pauses with fixed durations

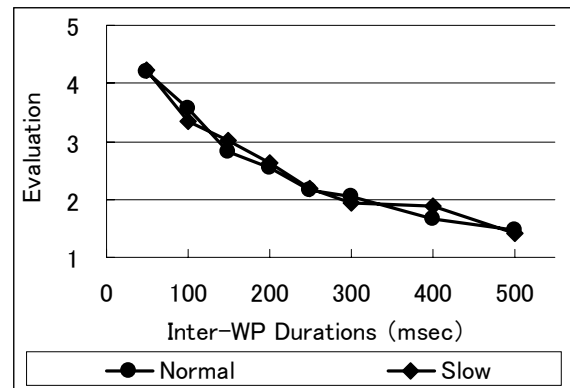


Figure 6. Controlling Inter-WP with fixed duration

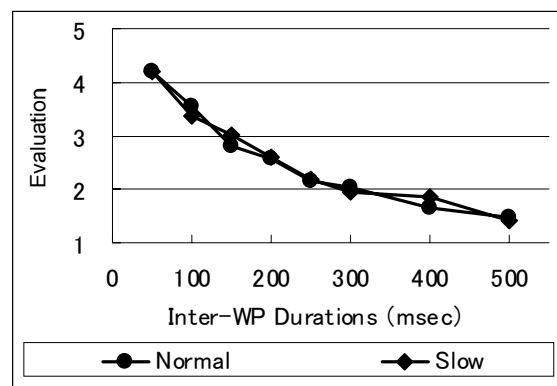


Figure 7. Controlling SUP with fixed duration

Experiment 3-1. Figure 8 and Figure 9 show the tolerance against deterioration of naturalness when all types of pauses were replaced with fixed durations (10msec-130msec). Figure 6 shows that naturalness deteriorated drastically when pause duration exceeded the threshold of 50 msec. In other words, naturalness of speech can be maintained when pause duration varies between 10 and 50 msec. ANOVA showed no significant main effect of English proficiency. No significant interaction between proficiency and duration was found, either.

Experiment 3-2. Figures 10 and 11 are an analysis of the results when the Intra-WPs alone were controlled with fixed durations ranging from 10msec to 130msec with increments of 20msec.

Figure 8 shows that naturalness remained the same when pause duration varied between 10 and 70 msec. ANOVA again showed no significant main effect of English proficiency. No significant interaction between proficiency and duration was found, either.

Experiment 3-3. Figures 12 and 13 are an analysis of the results when the Inter-WPs alone were controlled with fixed durations ranging from 10msec to 130msec with increments of 20msec.

Figure 12 indicates that naturalness remained the same (Intra-WP) when pause duration varied between 10 and 70 msec. ANOVA showed no significant main effect of English proficiency. No significant interaction between proficiency and duration was found, either.

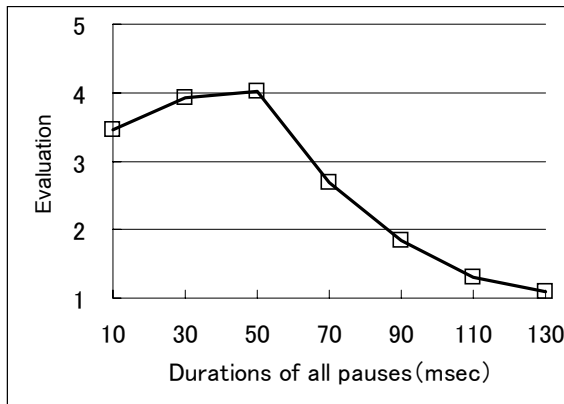


Figure 8. Controlling all pauses with fixed durations (All subjects)

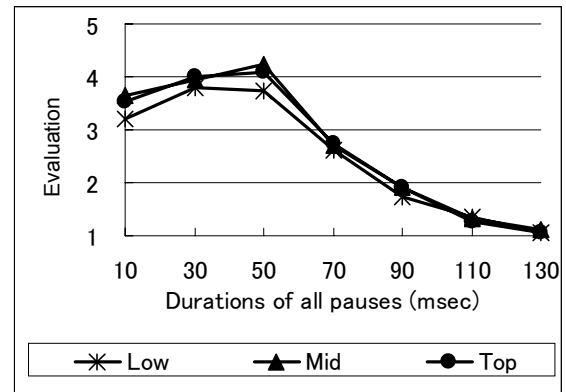


Figure 9. Controlling all pauses with fixed durations (Groups by proficiency)

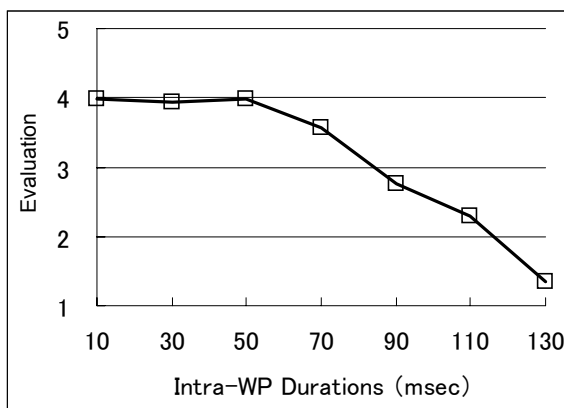


Figure 10. Controlling Intra-WP with fixed durations (All subjects)

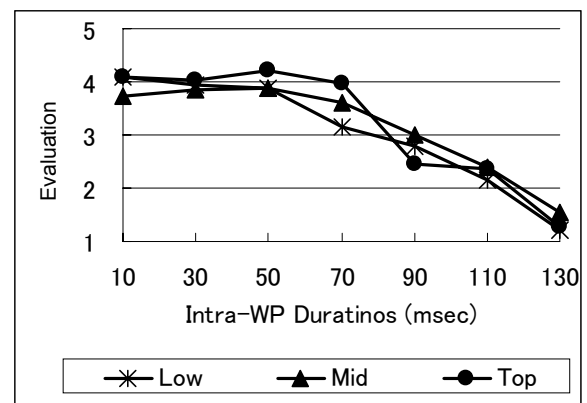


Figure 11. Controlling Intra-WP with fixed durations (Groups by proficiency)

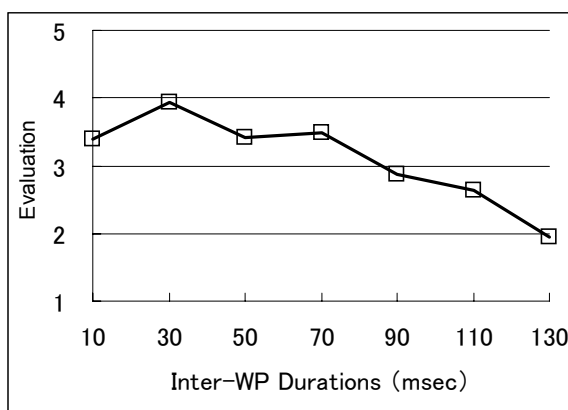


Figure 12. Controlling Inter-WP with fixed durations (All subjects)

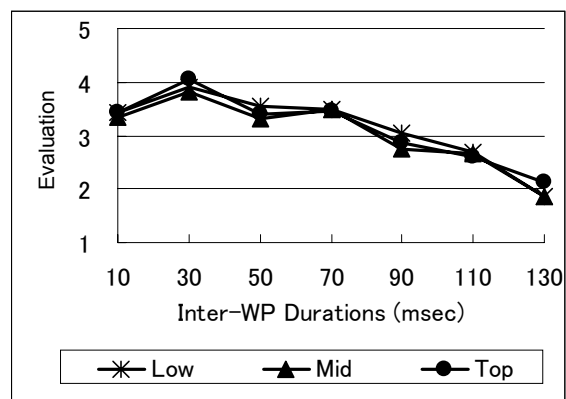


Figure 13. Controlling Inter-WP with fixed durations (Groups by proficiency)

Experiment 3-4: Figures 14 and 15 are an analysis of the results when the SUPs alone were controlled with fixed durations ranging from 10msec to 130msec with increments of 20msec.

Figure 14 explains that naturalness remained the same when pause duration varied between 10 and 130 msec. Together with the results shown in Figure 7, in which SUPs were controlled with fixed durations, we can

safely maintain that naturalness remains the same when pause duration varies between 10 and 500 msec. Again, ANOVA showed no significant main effect of English proficiency. No significant interaction between proficiency and duration was found, either.

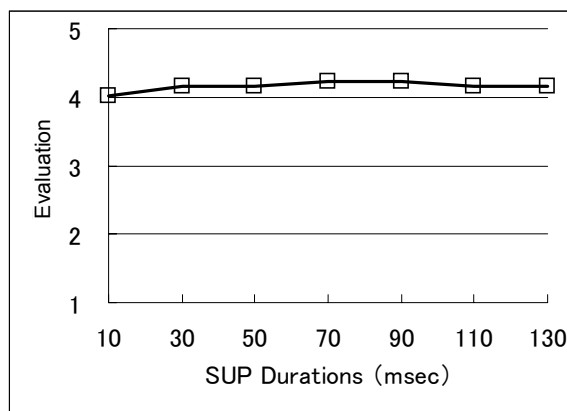


Figure 14. Controlling SUP with fixed durations (All subjects)

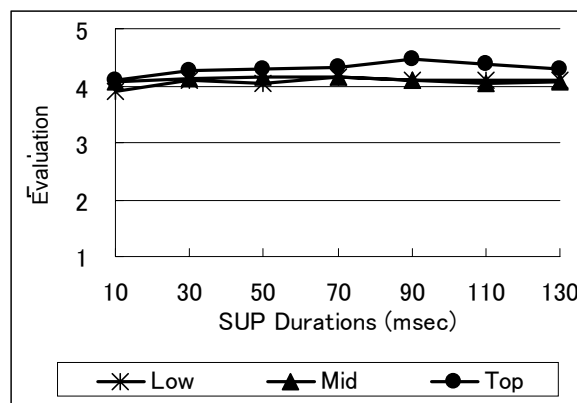


Figure 15. Controlling SUP with fixed durations (Groups by proficiency)

Conclusion

When Intra-WPs, Inter-WPs, and SUPs were uniformly replaced with fixed durations, subjects judged the controlled speech extremely unnatural. This suggests that there exists a unique duration range for each type of pause, and these ranges differ from one another. Our findings were:

1. when Intra-WP was controlled, naturalness of listening materials dropped very significantly,
2. Inter-WP with a range of 50 to 80 msec was evaluated as very natural, and
3. SUP remained natural even when prolonged for lengths up to 500 msec.

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Development of KUIS On-Line Self-Study System for False Beginners

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Abstract

This is an ongoing project of the Research Institute for Communication at Kansai University of International Studies (KUIS) in Hyogo, Japan. University students come from various academic backgrounds and many have not had the opportunity to learn 'functional' English before they enter the university. These students, in general, do not know how to prepare for language courses. Students' disinterest and their limited awareness of foreign language learning strategies make it difficult for teachers to manage lectures to the needs of each individual student. To address this need, 'Web' pages are being developed to encourage students to explore English independently and at their own pace, with the focus being on how to consult a dictionary, learn basic grammar and increase vocabulary. Each computer based learning module features self-teaching exercises. Students will transmit their answers through cyberspace for teacher input, correction and evaluation.

Introduction

Japanese university students today have various academic backgrounds. Some of them are ready to take "college level" English, but others have to struggle with basic grammar. As the Japanese birth rate declines, it is getting easier to gain admission to college. As more people pursue higher education, universities are no longer a place where only the elite can go.

Kansai University of International Studies (KUIS) is no exception to this trend. Although the required entrance examination does not include an English section, English is a required subject. KUIS students have to take English courses for at least three semesters. Once admitted, an English placement test is used to classify students. Even with a system of placement, similar student ability levels are difficult to maintain because of the diversity of their academic backgrounds. The required English Course meets three times a week, but those students with the lowest proficiency often need extra hours of study to keep up with their classmates. These students may require additional teacher support outside of the classroom, but this 'teacher support' is not always readily available at the moment of greatest student need. To provide students with free, easily accessible and convenient to use around the clock teacher support, we have developed a web based system of self-study which will help students to study on their own and at their own pace.

Having students learn on a computer is possible and practical because every student at KUIS owns a laptop computer and there are plenty of outlets for information transmission on campus. Additionally, KUIS has 190 desktop computers on campus that students can use. Students become computer literate in a required course. When they have questions or experience difficulties using their computers, students are encouraged to ask for assistance from the staff and faculty of the Media Center or Study Support Center.

KUIS has launched its own general information web page. Once constructed, the English self-study program will be added to this site.

To use the English self-study program, students will first access the KUIS web page and then click ‘Study Support Center.’ The Self - Study Program will appear on the screen. After logging on, users decide which section to study and can start any lesson they would like to study. When they have questions, they can ask teachers by e-mail.

Dictionary Section

Aims

When studying English, it seems to be a simple task to refer to the dictionary in order to understand the meanings of words. However, many false beginners have limited knowledge of dictionary usage. Students at this level fail to comprehend the correct meaning of English sentences or phrases. Consequently, they become tired of using a dictionary, and what is worse, they become tired of studying English. The Dictionary Section is designed to help students use a dictionary properly and more effectively. The dictionary page consists of three parts:

1. What we can find in the dictionary — Tutorial
2. How we can find the correct meaning, usage, or part of speech — Practice
3. Comprehensive Exercises

Contents and Procedure

In the Tutorial, students learn what kind of information a dictionary has. The following items are explained: (a) Word Entry, (b) Pronunciation, (c) Parts of Speech, (d) Meanings, and (e) Usages.

In the Practice, students have to answer multiple-choice questions as shown in figure 1 and 2. Before answering the questions, they are directed to refer to a dictionary page in order to find out the meaning of the target word. (See Figure 1.)

When users click ‘GO,’ they will be linked to the appropriate dictionary page and a display window of the various aspects of the word or phrase. (See Figure 2.)

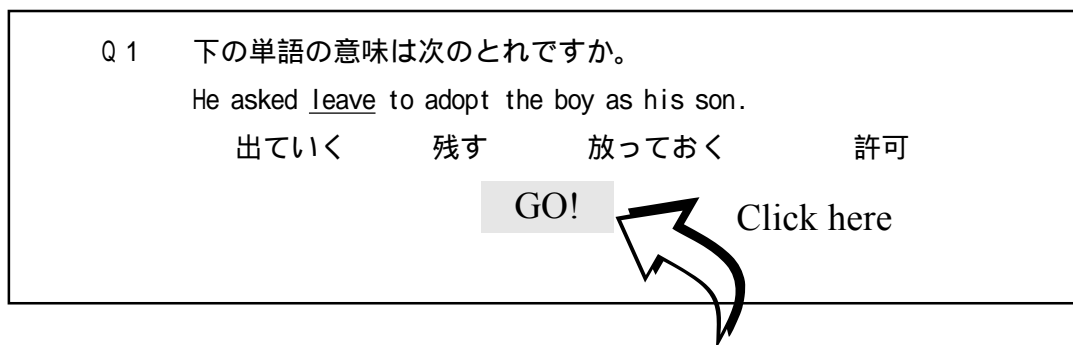


Figure 1. Sample web page—Multiple-choice question

After looking at dictionary definitions, students link back to the question page, and click the correct answer. (See Figure 3.)

If they get the right answer, they may go to the next question, and if not, they may either refer to the clue or go back and try again.



Figure 2. Sample web page—Dictionary page for a target word or phrase from “Taishukan’s GENIUS English-Japanese Dictionary”¹

¹In our web page, there are some dictionary reference tasks. We obtained permission from Taishukan to use “Taishukan’s GENIUS English-Japanese Dictionary.”

Now find the answer!

Q 1 下の単語の意味は次のどれですか。

He asked leave to adopt the boy as his son.

出ていく 残す 放っておく 許可

Figure 3. Sample web page—Multiple-choice question

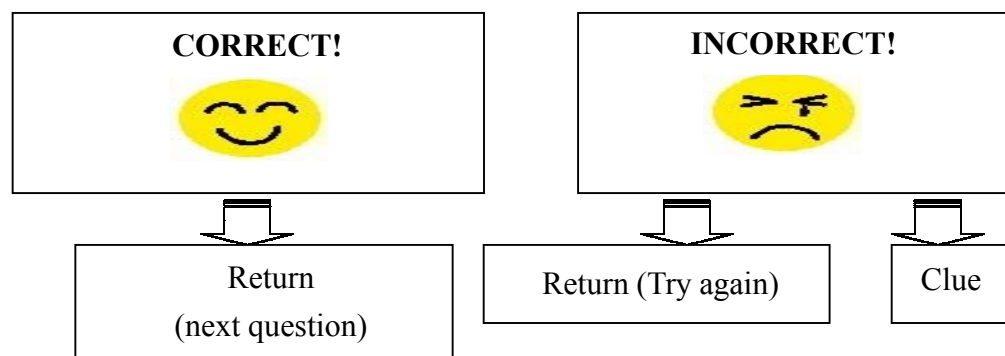


Figure 4. Sample web page—Reactions to correct and incorrect answers

Comprehensive Exercises

In this part, students have to complete some exercises to ensure they can use the dictionary properly. Learners read the question, then link to the dictionary pages to find the right meaning. There is no picture help as in the practice part above. Only pop-up clues are available here.

Vocabulary Section

The Vocabulary Section is being created to introduce students to essential vocabulary necessary to understand basic English. This section is made up of basic verbs, adjectives, adverbs, proper nouns, prepositions and campus terms.

This section has the following features: (a) Students can confirm the pronunciation of the word(s) they intend to learn by clicking on it (them). (b) All the words listed here will be accompanied by illustrative sentences. (c) The page contains illustrations, photos, charts and graphs so that users can have visual images of what the word denotes. And, (d) Tests are provided so that students can check their achievement by themselves and then submit their answers on-line. Instructors can confirm what each student has mastered.

The following is a brief explanation of each part of the Vocabulary Section:

1. Basic Verbs

Listed in this page are 90 verbs from a junior high school textbook. Verbs are listed alphabetically along with definitions in Japanese and illustrative sentences in which those verbs are used. Students can click on the verbs, and check the pronunciation.

2. Basic Adjectives

Listed on this page are 50 adjectives extracted from a junior high school textbook. Adjectives are introduced in alphabetical order along with their antonyms if they are also basic. Table 1 shows the Basic Adjective page chart.

3. Basic Adverbs

On this page, it will be mentioned that typical adverbs can be made by adding the suffix “-ly” to an adjective. Basic adverbs are divided into the following: adverbs of degree (e.g., very, so, little), adverbs of frequency (see Table 2), adverbs of manner (e.g., happily, slowly), adverbs of time (e.g., now, then, before, again), adverbs of place (e.g., here, there, home).

4. Basic proper nouns

This is to let students know the names of days, months, major cities and countries in the world.

5. Prepositions

The concept each preposition denotes is shown along with illustrative pictures.

6. Campus terms

Campus words such as “extracurricular activities,” “lecture hall,” and “Student Affairs’ Office” are introduced to help the students express their everyday life easily.

Table 1. Image of Basic Adjective Page

Adjectives (Antonyms)	Definition	Illustrative Sentences
deep(shallow)	深い	How deep is this lake?
difficult(easy)	難しい	This question is too difficult for me.
different(same)	異なる	You and I are different.
early(late)	早い	I got up early this morning.
far(close, near)	遠い	How far is it from here?
fast(slow)	速い	He is a fast runner.

Table 2. Image of Adverbs of Frequency

never 0%	rarely	sometimes	often	usually	always 100%
Illustrative Sentences			Japanese translation		
I never eat rice for breakfast.			私は決して朝食に米は食べない。		
I rarely eat rice for breakfast.			私はめったに朝食に米は食べない。		
I sometimes eat rice for breakfast.			私は時々朝食に米を食べる。		
I often eat rice for breakfast.			私はよく朝食に米を食べる。		
I usually eat rice for breakfast.			私は普通は(大抵は) 朝食に米を食べる。		
I always eat rice for breakfast.			私はいつも朝食に米を食べる。		

Grammar Section

Aims

The main aim of this section is to give false beginners a chance to relearn and master basic English grammar. We mainly focus on the basic level. Most of the students targeted with this program have lost their motivation to learn English. Therefore, our secondary aim is to make them regain their confidence in English and motivate them somehow by getting them to realize that they can make simple conversation in English with the knowledge of basic grammar. To achieve these aims, we 1) use as few technical terms as possible in grammatical explanations; 2) give simple and clear explanations; 3) make a task based program; 4) give many drills so that they can learn how to put the grammatical knowledge into real use.

Contents and Procedure

The structure of this grammar section is shown in Figure 5. The top page of this section is for the explanation of how this section is constructed and how students will use this program.

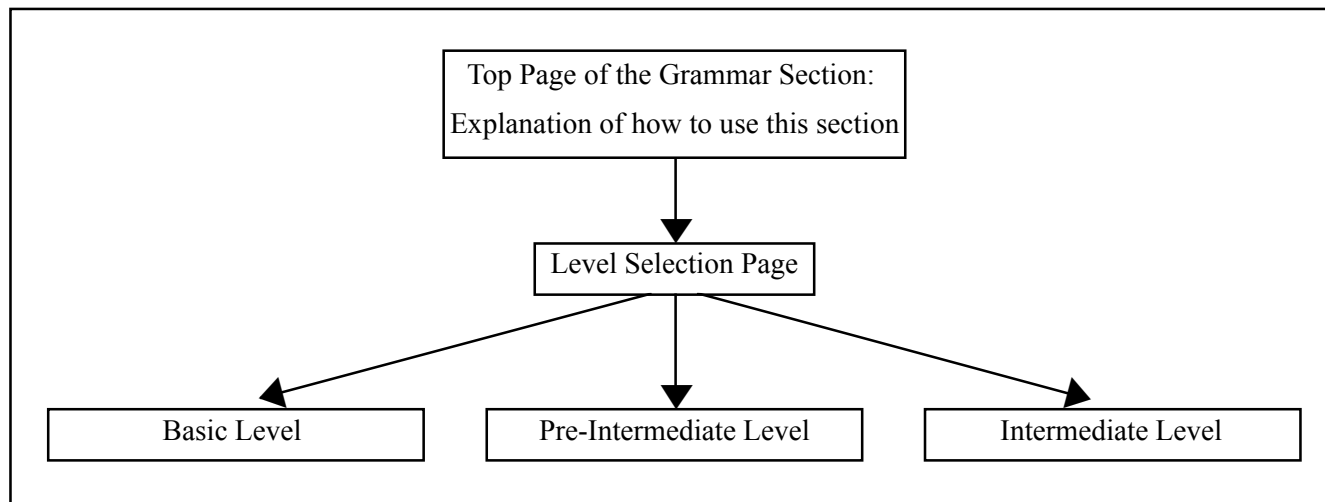


Figure 5. The structure of the grammar section

Table 3. Contents of Each Level

Basic Level	Pre-intermediate Level	Intermediate Level
Word Order	Wh-questions	To-infinitive
Tense	Parts of Speech	Gerund
Aspect	Singular and Plural Nouns	Participles
	Pronouns	Conjunctions
	Modal Verbs	Relative Clause
	Voice	Comparative Adjectives
		Superlative Adjectives

This program has three levels; Basic, Pre-intermediate, and Intermediate. The Table 3 shows the grammatical items that are taught in each level. Each level has 10 lessons and a review. Learners can start at any level (or lesson) that suits them. Each lesson consists of grammatical explanation (Figure 6), exercises (Figure 7), and a checking test (Figure 8). Students should proceed in this order.

About 20 quizzes are provided in the exercise. When students' answers are not correct, a hint window pops up. Hint and question buttons are provided so that students can get back to the grammatical explanation or ask questions by e-mail. After students finish the exercises, they go on to the self-checking test section. Students pass each lesson when they make 9 correct answers out of 10 questions. A feedback of 'Correct' or 'Incorrect' is given for each answer. If students do not pass the self-checking test, they can go back to the grammatical explanation and the exercises or skip them and try the same test again.

Lesson 1 英語の語順

文は色々な語が集まってできていますが、日本語と英語ではその並び方（語順）が異なります。

I	play	soccer.
S (主語)	V (動詞)	
僕は	する	サッカーを

このように、英語では主語の次に動詞がくるのです。この主語のすぐ後に動詞がくるという語順は英語の基本的な語順で、これからみる基本文型は全てこの語順になっています。では、この違いに注意しながら、英語の文型を学習しましょう。

「僕は12時に寝る」(SはVする)型
 英語での語順は「僕は・寝る・12時に」となり、「S(主語)はV(動詞)する」の部分が初めにきて、その後に時間、場所、頻度、程度などの情報が付け足される形になります。

I	go	to bed	at midnight.
僕は	行く	ベッドに	12時に (ベッドに行く=寝る)
I	live	in an apartment	near the university.
僕は	住んでいる	アパートに	大学の近くの

Figure 6. Grammatical explanation

練習問題

次の語を並べ替えて文章を作り、() にタイプして下さい。
 入力し終えたら OK をクリックしてください。なお、文頭にくる語は大文字で入力すること。

例) 彼女は学生です。
 is, she, a student.
 (She)(is)(a student).

問題 1
 僕は毎朝 8 時に起きます。
 I, every morning, at eight, get up.
 ()()()().

Figure 7. Grammatical explanation

確認問題

では、どれだけ理解できたか試してみましょう。問題のやり方は練習問題と同じです。
 10 問中 9 問正解すれば、合格です。がんばってください。

問題 1
 私は携帯電話を電車を置き忘れました。
 my cellular phone, left, I, on the train.
 ()()()().

Figure 8. Checking test

Summary

We still have a long way to go before we can determine if this system really works. But it is clear that those students who we call false beginners need to be exposed to English more than they are now. If they do not know how to learn English by themselves, we will have to show them how to do it. And there is no reason why we should not make the best use of cutting-edge technology if it is available. We have to admit this system is not perfect, and may need some revision to meet the students' demands and interests. However, it is our hope that our students will realize that a little language goes a long way.

Acknowledgements

We would like to express our sincere gratitude to the following people; Mr. Toshiaki Iizuka of Taishukan, Publishing Company, Ms. Tomoe Watanabe of Hiroshima City University, Mr. Katsuhiro Saitoh of KUIS Media Center, and Ms. Adrian C. Chandler of KUIS, Women's College.

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The Development of Multimedia CD-ROM for English Learning: The Evaluation of the CD-ROM on the Significance of Listening Comparing the CD-ROM Material and Video Material

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Abstract

This study investigates the significant differences on the English learning between two kinds of the media materials; a CD-ROM and a video. We developed the CD-ROM for the English learning; the title of "America Virtual Experience". Two groups of Japanese university students participate in the six lessons on the CD-ROM material and on the video material. As for the each group, we measured the pre-test/post-test in English listening comprehension, the achievement listening test of each lesson, and the questionnaires of four moderators: interaction, motivation, learner-directed learning, time efficiency. One way analysis of variance procedures are calculated that the English listening proficiency of the participants on the CD-ROM was slightly more significant than that on the video. In the time efficiency, interaction, motivation and learner-directed learning, the statistical analyses in the learning on the CD-ROM showed a little more significant than that on the video.

Introduction

We have been using the textbook, the tape, the video and the CD-ROM for teaching English in the classroom. A large amount of research of significant difference between a textbook and a tape, between a tape and a video have been investigated (Dhah, 1990; Steven, 1991; Machida, et al.; 1991; Nozawa, 1997). However the researches of significant difference between a video and a CD-ROM are a few (Chihara, 1995; Takefusa, et al., 1996; Doi, 1996; Tanaka, 1997).

While the development computers has brought better interactive multimedia applications. They may enhance more communicative, motivating, learner-directed learning experience than a video. These experiences may also enhance more effective English learning than that of a video. Therefore we developed the CD-ROM for English learning; the title of "America Virtual Experience." We program a video materials of "Ticket to Ride", the text, the dictionary, and the questions into CD-ROM, using Adobe Premiere 4.0 and HTML. We try to evaluate this CD-ROM on Japanese university students' English learning. Then we tried to research the significant difference on the English learning between the video and the CD-ROM through their listening test and questionnaires.

Procedure

Participants

A Group: Thirty freshmen in Kanagawa university learned 6 American cities on a CD-ROM.

B Group: Thirty freshmen in Kanagawa university learned 6 American cities on a video.

Term

The whole term from the beginning of May in 1999 to the end of January in 2000.

Material

CD-ROM material:「アメリカバーチャル体験」; Directed by Sachiko Tanaka, Published by Ikueishinsha in May 1999. This CD-ROM was produced especially for people who have been looking for a reliable and enjoyable way to learn English the way it is really spoken. For this purpose, we created Mie Toyama, the main character of this series. Mie who has been accepted at U.C.L.A., goes to America to start classes. However she decides to take advantage of the opportunity to get acquainted with America before school begins. She tours around six major American cities – New York, Boston, Washington, Las Vegas, San Francisco, and Los Angeles. This 「アメリカバーチャル体験」 is a collection of the situations and conversations she encounters along the way. All films footage was shot on location in each of the cities. This program is to introduce America and the English language spoken there. You can capture the uniqueness and charm of each location.

Video material: “Ticket to Ride” Published by Ikueishinsha in 1989

The content of the two materials is almost just the same.

Method

1. Pre-test

The participants have the Listening Comprehension Test in Complete Practice Test One of TOEFL by Heinemann. It consists of 50 questions adding Part A, Part B, and Part C.

2. They study six American cities on each media.

As we don't have enough video decks for all students at a time, a teacher has to control students' learning pace and place in a groups. Some students often fall into a doze during the class.

3. Achievement test and Examining the time efficiency

After the learners studied the lessons of one American city on the each media, they filled several blanks of the text in listening within the same minutes on the each media. This is the achievement test. At the same time, we can check the time efficiency.

4. Questionnaires of motivation, learner-directed learning, time efficiency

Analyses

Pre/Post test

Learners took the pre-test/post-test to measure the students' listening comprehension. We checked the difference between the gained score of the pre-test/post-test on the each media. We confirmed t-score is significant.

Table 1. The Difference Between the Gained Score of Pre/Post-test on the Each Media

	CD-ROM Group			Video Group		
	Pre-T	Post-T	Gained	Pre-T	Post-T	Gained
Average	13.0041	15.5178	2.3813	12.9193	14.53411	1.4506
SD	4.01343	4.98281	1.61238	4.62944	4.204316	0.914

df = 2 (N-1) 56, $p < 0.05$, $t = 1.67$ $t = 4.57^*$

Estimate of the Time Efficiency and Achievement Listening Test

Average of the achievement listening test on CD-ROM within the same time is bigger than that of video. We confirmed t-score is significant on a CD-ROM..

Table 2. The Time Efficiency and Achievement Test

	CD-ROM	Video
Average	11.5089	9.3036
SD	1.7453	2.9629

df = 2 (N - 1) 56, $p < 0.05$, $t = 1.67$ $t = 3.3^*$

Questionnaires

In the questionnaires of motivation, learner-directed learning, we calculated these mean, S.D., t scores. We also examined the relationship between them in one way analysis of variance. We confirmed t-score is significant on a CD-ROM(** $p < 0.1$).

Table 3. Questionnaires

	Questionnaires				t
	CD-ROM		Video		
	Average	SD	Average	SD	
Student Control	3.22	0.81	1.87	0.62	6.4*
Interaction	2.93	0.68	2.59	0.55	1.9*
Motivation	3.14	0.75	2.88	0.38	1.52*

df = 2 (N - 1) 50, $p < 0.1$, $t = 1.31$

Conclusion

One way analysis of variance procedures are calculated that the participants experienced a significant proficiency in listening to English on CD-ROM. In the time efficiency, interaction, motivation and learner-directed learning, the learning on CD-ROM is more significant than that on a video.

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Appendix

Questionnaire for CD-ROM / Video Learners

Student Control

1. Is it easy to operate this software/video tape?
2. Do you study it on your own pace?
3. Is it easy to repeat it?
4. Can you control the speed of learning ?
5. Could you decide and select freely where to go and back?

Interaction and Feedback

1. Are the interaction and feedback frequent?
2. Are the types of them informative?
3. Do they enhance your comprehension of English/?
4. Do they strengthen your memory for English?
5. Are they positive and cheering up learning?

Motivation

1. Is the learning English with computer enjoyable?
2. Are you interested in this software?
3. Does this software/video arouse your curiosity?
4. Do you want to calleng to this software?
5. Do you feel the sense of fullfillment after playing the software?

Discourse Analysis in the Classroom: Working with Student-Generated Texts

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Abstract

This paper looks at project using real-life language data collected by learners themselves. Tape recorders were used by students to record conversations, and these texts were worked with in a variety of ways in and out of the classroom. The procedure used was based on one originally suggested by Clennell (1997: 118, 1999: 85-87). The fact that the texts were generated by students themselves gave them an intrinsic interest, and analysing them became a 'communicatively real' activity. Students were in control of the texts at every stage, from collection to analysis, giving them a strong sense of identification with the task. The analysis consisted of identifying possible communication breakdowns and the reasons for them; identifying differences between what students heard on their tapes and what the teacher heard, leading to individualised improvement plans; and investigation of alternative ways of representing similar meanings through comparison of student output with native speaker output.

Introduction

The continuing shift in language teaching from the notion of the teacher as imparter of knowledge to that of teachers and learners collaborating in the investigation of their subject and the development of skills, (Hirvela, 1999; Wilhelm 1999, Carroll 2000, 1994b) has led to the search for materials derived in some way from learner interests (Nunan 1988: 62; Carroll 1994a, p. 137). Leech points out that one source of data for this kind of 'discovery learning' is computer corpora (Leech 1997, p. 3). Others are collections of tape-recordings with their transcriptions such as Carter and McCarthy (1997). Other researchers, most notably Suzanne Eggins (1997, p. 315) and Heidi Riggensbach (1999, p. 45) have further advocated the use of learners own recorded texts for intensive analysis.

Carter and McCarthy (1997, p. 7) note the difficulties of collecting natural spoken language data, and the resultant emphasis on 'large quantities of broadcast talk [which] can be collected easily [...] and similarly [...] lectures, discussions, meetings in formal settings or speakers narrating or reporting straight into a microphone.' Nevertheless, it is precisely the more difficult to collect, conversational data that is most interesting and has the greatest potential as classroom material. Moreover, even the more easily collectible natural data is in fact not so easily encountered by EFL students.

Natural conversation is of course not easy for language learners to listen to, or to make sense of. Nevertheless, there are good reasons for making the attempt. By looking at how language is actually used students may be better able to connect what they learn in the classroom with what they hear, or would hear, in real communication situations.

One way of doing this is to use published collections of such authentic speech, such as Carter and McCarthy's 'Exploring Spoken English' (1997). This collection contains recorded conversations across a variety of genres, unscripted and unrehearsed. By listening to the conversations, and following the transcripts and explanations students can come to be aware of features of English as used by proficient speakers that they may never before have considered. For example repetition, grammatical 'mistakes', unfinished 'sentences', and finishing of others' utterances are all evident in the tape-recorded conversations.

However, such materials have some problems. First, of course, they are difficult to listen to, particularly for students used to the artificially slow pace of textbook materials, and indeed many teachers' speech. This problem is well addressed, in Carter and McCarthy, by the provision of transcripts and by detailed focus on short stretches of the texts.

A more important drawback, though, is that like all textbook materials the conversations are inevitably decontextualised. That is, they are taken out of the time and place in which they took place and brought into the classroom as specimens for study. The observers (the students) have no obvious connection with the people and events recorded.

Asking students themselves to collect the language data both renders it less difficult to hear and contextualises it. When the recording is brought into the classroom some of its context comes with it, in the form of the person who recorded it. If the student is also a participant in the conversation then it is even more context-embedded, even as a subject of classroom study.

The Students

Twenty five 2nd year students in a national university in Japan took part in the project. 20 were English majors, and 5 were majoring in other subjects. Four students had spent a year or more in an American or Australian high school. All of the students were familiar with journal writing and 14 had previously done some simple transcription.

The Activity

The procedure is quite simple. (Clennell 1997, p. 110; 1999, pp. 85-87) To begin with, examples of tape-recordings and transcripts are analysed in class. Though difficult, the Carter and McCarthy book is useful for this. Once the procedure has been done once, though, previous students' tapes and transcripts are more accessible. The analysis can look at whatever features the teacher would like to focus on, but may include differences between learner-talk and proficient speaker-talk, phrasing and pausing, non-standard expressions, mis-hearings, grammatical issues and so on. Students are then asked to make a similar tape-recording, transcript and analysis.

Modeling

Students listened to a recorded conversation, and then listened again with the help of a transcript. They then discussed, with the help of the teacher, features of the conversation (for example unfinished sentences, 'errors', difficult to hear items and so on. Following this they tape-recorded their own conversation with a classmate, transcribed some of it in class, and discussed the transcription process and communication issues arising out of the transcriptions. Topics were given by the teacher: eg. a funny story; should students have part-time jobs?; my favourite The questions for discussion included following:

- Were there any misunderstandings?
- What would you do differently next time?
- What was interesting about the tape and transcript?

Doing

Students took a tape recorder and recorded a conversation in which they themselves took part (with a person who uses English easily, a native speaker or highly proficient speaker). They then listened to the tape recording and identified communication or miscommunication issues. They transcribed the part of the conversation just before

and just after the issue and commented on the transcription. They were instructed to transcribe only what they could actually hear on the tape, not to summarise what they had intended to say, and not to 'correct' any errors. They were asked to transcribe no more than 30 seconds of conversation.

Reflecting and Learning

After the teacher had listened to the tape and added to or commented on the transcription, students wrote a report on what they had found from doing the recording and transcribing task, and presented their transcript and report to the rest of the class.

Findings and Discussion

The data referred to in the following comes from students' reports on the activity, from students' own transcripts, and from the teacher's re-assessment of the latter where there were discrepancies.

The fundamental aim of this sort of exercise is to stimulate students' awareness, or consciousness as it is referred to by James (1998, p. 260), of their own use of language and that of others with whom they interact. Some students are more able than others to do this with skill from the beginning, and some aspects of communication are more easily identified than others. There are therefore two levels of learning. The first consists of those items noticed by students themselves, in their reports on the interactions. These learnings are important. Since they come from students themselves they are likely to be remembered. The second level of learning comes from those aspects of the communication pointed out by the teacher. These learnings are also valuable since they constitute things that the students had not noticed by themselves, but which they can see clearly in the transcripts, and hear clearly on the tapes, once they are made aware of them.

Student-Initiated Observations

Students evaluated their own communication patterns, and some linked these evaluations with the specific items they had covered in the course textbook.

When I asked Chieko, 'You have your band, don't you?' I knew she has her band so I lower the tone in the end. I've been thinking that this system of "tag question" is interesting. This time I noticed that there is the same system of that in Japanese. I've thought English which have this system is special but I know it's natural.'

In this conversation I noticed a lot. The difference of speaking without any grammatical mistakes, but I also noticed that having a conversation is interesting and we can know grammar that we don't notice by only myself.

We care less about grammar in speaking than writing except when we want to emphasise what we want or we think the companions might misunderstand the meaning.

In this conversation we use present simple. We learned this from the textbook, page 11. It's a very simple form. So we had no mistake in grammar.

Some students pointed out English-Japanese translation issues, becoming aware in a practical, concrete way of the connection between their knowledge of English and their own way of using it.

First of all, on the third line, when she said "No", I thought she disagreed with us, that is, she thought Japanese wear kimono many times. But from the next sentence, I found that she agreed with me. There is a difference in the use of "yes", or "no" for responding between English and Japanese, so I think I misunderstood at that time.

Some students became aware of stylistic differences in speech patterns among proficient speakers of English

He talks like a teacher!

Other students noticed communication strategies that proficient speakers used, and compared them with their own strategies. (See also Eaves-Walton, 1999, p. 8)

I noticed Ingrid's colloquial expressions. For example "I'm just wondering", "You know" and "I mean". I never use these phrases, but I want to.

Also I noticed the great role of nodding. Nodding shows understanding or agreement to a speaker as well as encouraging him/her to keep talking. And the words "um" and "ah" give speaker a time to think about what to say next.

Teacher Interpretations

A wealth of linguistic behaviour was evident in the tapes and transcripts of just this small group.

Strategies Proficient Speakers Use to Facilitate Communication: Filling in gaps and guessing meaning

S: Do you remember my house? And in front of my house, there are many houses?

J: Yes, yeah

S: There wasn't a house in front of our house

J: When you bought it?

...

N: I don't have enough time to ... to

K: time to ... time to ... time to enjoy yourself?

N: Yes, yes!

...

N: It is the celebration for my ...twen ... twenty ... I'm going ...

W: Oh! Twentieth birthday?

Simplifying their English

W: Oh, wow ... [laughter] please send me a photo ... [laughter] ... I would like to see!

Changing sentence in mid-construction, and self-correcting

S: They wants ... City wants them to move ...

...

J: so ... they had them ... (so) [they] bought ... [they] built more houses for the people to live in?

...

N2: they gonna ... he gonna be a rich ...

Interrupting the topic and then returning to it

S: They wants ... City wants them to move ... because they're gonna ... build a road, big road, and ... bridge, to the bridge

J: uh-huh. Look

S: Oh, beautiful

J: so ... they had them ... (so) [they] bought ... [they] built more houses for the people to live in?

Repeating the whole phrase after a pause, to preserve the integrity of the phrase

Compare *N: No, but now Japanese people don't ... wear ... kimono so much*

With *W: 'To the ... to the shrine'*

The student pauses between words, and then continues the utterance, while the more proficient speaker, in this case a native-speaker of English, repeats the beginning of the phrase, with it's conclusion, to make comprehension easier.

On the other hand, some students also used this strategy.

N2: they gonna ... he gonna be a rich ...

M: the man who doesn't have a ... who doesn't have a knowledge

Learner Behaviors

Some students fail to hear grammatical items which have a low priority in their current interlanguage, and 'hear' others which are not actually there, perhaps because their current interlanguage grammar leads them to expect them

J: so ... they had them ... (so) [they] bought ... [they] built more houses for the people to live in?

(square brackets indicate items the teacher, but not the student heard on the tape; round brackets indicate items the student but not the teacher 'heard' on the tape)

Something (that) I can say > Some thing[s] I can say

Some students hear correctly but cannot reconcile the sound with any meaning .

M: I mean, I'm just wondering sometimes ... Is it a demand from .. the society (but) [that] ... you have to keep it <now OK?>

The student correctly heard the word 'now', but didn't understand how it fitted into the utterance as a whole.

Some students fail to hear but fill in grammatically necessary items.

M: yeah, yeah, exactly

S: but the ...

M: exact{ly} ...exactly, yeah

(Curled brackets {} indicate items the teacher heard and the student was unable to hear but included in the transcript because she judged them grammatically necessary.)

Some students mis-hear, but make sense of their mis-hearing

M: But sometimes, you know, you ... I mean it's nothing, I mean it's the same in (the moment) [Denmark], those trends, everybody is following.

Some students demonstrated great skill in managing difficult conversations

O: Well, what clearly do you, what point do you want to make? When you make (the) [a] cultural point, you have to be clear what is your point.

...

O: well, the question is a little too big ...I can't because they're all different ...

...

F: OK. So ... then ... what do YOU think about it?

Some students used effective communicative strategies for overcoming grammatical deficiencies, by reformulating utterances in simpler ways:

I hear that you go abroad near future. When will you go abroad?

Some transcripts and tapes demonstrated that turns can overlap because of politeness rather than rudeness

S: Before ... they have to ... cut their hairs like above ... the eyebrow, like that, so ... we ... we're feeling about ... against it ...

M: yeah, yeah, exactly

S: but the ...

M: exact{ly} ...exactly, yeah

S ... because ... I don't know ...

M: But sometimes, you know, you ... I mean it's nothing, I mean it's the same in (the moment) [Denmark], those trends, everybody is following.

Conclusion

The data yielded by this activity, collected by the learners themselves, and analysed by learners and teacher together, reveals an extraordinary richness. It is not difficult to identify numerous facets of real life language use, often at odds with the simplified language typically presented in textbooks, and often hidden from awareness until subjected to the kind of close analysis involved in transcription. In addition the process of data collection, carried out and controlled by the learners themselves, renders the texts eminently suitable for classroom use, since it contains an intrinsic interest by virtue of being deeply contextualised for each individual student. Small-scale as this study is, it may point the way to further more systematic investigation of the uses to which student-generated texts might be put.

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Discipline-Specific CyberNeeds for Reading and Writing Instruction

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Abstract

This paper briefly identifies two educational problems, related to instructional content and high-tech instructional delivery, which are currently slowing progress toward developing high levels of linguistic competence among the English speaking populace in general and specific domains of English – particularly in the areas of reading and writing. Solutions are then proposed to solve these problems, which recommend refocusing professional energies on areas that are genuinely in need of attention, in light of current trends in educational delivery which will likely remove large numbers of English teachers from employment in the profession in the not too distant future.

Literacy in the Information Age

In this Information Age of ours, never before has society generated so many words and placed them in such multitudes of texts. Words appear on TV screens and cover our newspapers, fill recipe boxes and computer files, line the selves of libraries and supermarkets, and race across classroom blackboards after every teacher's chalk. Some words shout loudly in neon, some boast boldly in gold, and others hide quietly in fine print. In this age of ours, with nearly every human activity involving text, the ability to read and write at increasingly sophisticated levels has become essential for successful human existence.

Reading and writing, however, require special training; for unlike spoken language, which normally develops at home, literacy must be taught, and this normally takes place in schools. In fact, the initial objective of every nation's educational system is to produce a literate population, which first can read, then write, and then begin to learn other skills and acquire additional knowledge after that. A teacher's role is clearly central in producing a society that can read and write.

The English teacher's role in building literacy encompasses two important components: content and delivery. Content refers to the material deemed appropriate for instruction, and delivery refers to how that material is packaged and presented to the learner. If content is genuinely useful and delivery is genuinely engaging, students are more likely to understand the information presented to them and make significant progress in their own reading and writing practices. In the Information Age, high technologies are enabling teachers to deliver educational content in increasingly sophisticated and interesting ways; however, technology assisted instruction never surpasses content in its importance in the educational package. Better technologies may enable good content material to be delivered more efficiently and effectively, but increasingly sophisticated machinery will never make poor content better. Good education today requires both excellent content and sophisticated delivery, but a language teacher's primary concern should be the first.

EGP and ESP

In the field of English language education, teachers acquaint students with texts that surface in a variety of different situations and help them learn to produce the ones which will likely be required of them. Some texts are general in nature, and others more specific. Because the nature of general and specific texts can vary rather greatly

in this current age, the field of English Language Teaching (ELT) has divided itself in two, enabling language specialists to devote their time and energies in greater concentration in one of two professional domains: English for General Purposes (EGP) or English for Specific Purposes (ESP).

For teachers in EGP, the primary instructional objectives are 1) to acquaint students with English in its existence as a linguistic system and 2) to enable students to master the system well enough to employ it successfully in situations they are likely to encounter in daily life. The content of EGP instruction includes the sounds, symbols, lexis, and syntax of English, along with the conventions of spoken and written discourse as they are employed by the general public in social, academic, and workplace contexts such as initiating conversation with strangers, comprehending classroom lectures, or requesting a raise from one's employer. The acquisition of general English normally begins at home for native speakers, but for non-native speakers, English language learning frequently begins in an *English as a Second Language* or an *English as a Foreign Language* (ESL/EFL) classroom. Proficiency in English at increasingly higher levels, particularly in reading and writing, is fostered in English language courses taught to native and/or non-native speakers alike in K-12 and in some university courses (e.g., freshman composition or literature appreciation). Linguists and rhetoricians who conduct research in EGP study the characteristics of English speech and text, and then describe how the language is, was, or could be used by people at home, in school, or in general social situations. In the field of English language education, most language professionals are employed in EGP.

ESP, on the other hand, is somewhat different in nature. For teachers in ESP, the primary goal is to acquaint students with a specific sphere of English, rather than the English linguistic system as a whole. This specific sphere of English is used by a specific subset of the English speaking population to accomplish specific academic or workplace tasks, which require English knowledge and skills beyond that normally acquired by the general public, and thus this specific knowledge and these special skills require special training. Acquisition of ESP frequently begins near the end of one's schooling, when people begin training for their careers, such as in a technical/vocational program or in the latter years of one's university education. ESP training may continue after graduation as well, in the form of workplace seminars or workshops designed to further enhance one's skill in using English for specific professional tasks. Linguists and rhetoricians who conduct research in ESP study the specific characteristics of English speech and text in specific academic/professional spheres, and then describe how the language is (or could be) used by specialists to carry out complex study- or employment-related tasks.

If we consider reading, for example, from both an EGP and an ESP perspective, we can easily observe that material targeted for instructional content is vastly different. Reading instruction in EGP, for example, familiarizes native and/or non-native speakers with novels, essays, magazine and newspaper articles, telephone books, recipes, board game instructions, directions, maps, road signs and whatever other written English a child or adult may encounter, and want to understand, in order to live a normal literate existence. Reading instruction in ESP, on the other hand, acquaints learners (usually adults) with spreadsheets, technical reports, pharmaceutical symbols, legal contracts, programming code, pesticide labels, and similar symbols or text which are generally read by specialists in the course of highly specialized work. Society needs people who are competent in both kinds of English – general English for general activities and special English for highly specialized activities – and educators clearly play a major role in facilitating this achievement.

Two Problems

In recent years, two problems have surfaced in ELT which seem to be slowing down our progress in developing a literate society that is able to process both general and specific English texts. Since a significant portion of the world's knowledge in the Information Age is generated and disseminated in English, the reading and writing of English texts are especially crucial to success in both general and specific realms. The first of these problems is a content problem, and the second problem concerns delivery.

The Content Problem

The content problem that appears to be hindering international progress in fostering English literacy has primarily resulted from a poor distribution of specialists. There are too many educators competing for a shrinking number of jobs in EGP, while a surplus of jobs in ESP either remain unfilled or become staffed with poorly qualified teachers when the only job seekers who apply prove disappointingly weak. This is a genuine tragedy for ELT, for many brilliant minds seem to be wasting both energy and brainpower searching for interesting new EGP content that is significant enough for scholarly research and publishing, when greater needs with higher value are left ignored in ESP. As a result of this imbalance in professional ELT distribution, ESP content appropriate for instruction in many occupational fields remains weak or entirely unidentified, while journal and conference papers abound in EGP on topics of questionable value to language learners. Increasingly sophisticated technology for delivering EGP content will not make politically popular topics more essential for mastering English, nor will better technology improve weak and faulty ESP. Too many highly competent scholars are devoting their talents to marginally useful research issues in EGP, while far too many content needs in ESP remain untouched.

The Delivery Problem

The delivery problem that appears to be hindering progress in creating a large international population of people who can read and write well in English also results from a poor distribution of specialists. There are too many educators dabbling in the development of high-tech instructional media when computer programmers and other technical specialists could be doing a much better job. As a result, many Computer Assisted Language Learning (CALL) applications are limited in their range of useful functions and lack appropriately supportive visual layout. Web-based CALL is particularly weak in these areas because English teachers can easily pick up some simple programming tricks and then throw together a few instructional Web pages rather quickly, which frequently contain equally amateurish ELT content.

In modern times, it is no longer possible to be a Renaissance man (or woman) who can excel in many diverse areas. The Information Age has generated vast amounts of information that must be learned for each different career path, along with highly specialized skills, too. Mastery of a profession takes time, and since new information appears so quickly, keeping up-to-date makes continual learning and devotion to one's specialization absolutely essential. Generalists who possess shallow knowledge in many different areas, and perhaps keep up-to-date on none, usually find it increasingly difficult to obtain stable employment in any professional area these days. Those in EGP with a Master's in TEFL, or something similar, and a dash of knowledge about HTML or JavaScript for simple CALL applications especially endanger themselves with dead end careers and potential unemployment in their latter years – even if their current job situation appears quite stable and lucrative. EFL/CALL generalists in Asia and the Middle East, where high salaried jobs are still relatively easy to come by, may be facing particularly uncertain futures. Consider the following example.

In Japan, current annual salaries for English language teachers in junior and senior high schools, conversation schools, junior colleges, and universities generally run somewhere between 3,000,000 – 12,000,000 yen (i.e., \$27,273 – \$109,091 at the current 110 Japanese yen to 1 US dollar exchange rate). If we roughly assume that a typical teacher's salary during his/her career averages out at 7,500,000 yen (\$68,182) per year and then multiply that by an average of 35 years of teaching, we arrive at 262,500,000 yen (\$2,386,364 US) of income for the career of a typical English teacher. This is a lot of money for a school to invest in educational resources for its students, particularly if the investment is an English teacher who merely reads from popular textbooks, drills students weekly with multiple choice exercises, and plays language cassettes or videos to expose students to authentic English. Investing in quality computers with good CALL software that can do all of this, and much more, would prove to be a much wiser investment for any school. Quality high-tech instructional delivery is and will continue to replace teachers, especially generalists in EGP with average qualifications. In fact, I predict that in the not too distant future, a small number of companies and universities, staffed with the world's best and brightest linguists, educational psychologists, cognitive scientists, graphic artists, computer programmers, and other specialists in educa-

tional content and high-tech delivery will produce enough high quality language education media, delivered via distance education, for the entire planet – thus rendering most generalists in EGP (and CALL) unnecessary. Clearly, the evolution of CALL from its currently limited state to more sophisticated educational packages designed by better qualified specialists will increasingly attract the attention of ELT educators currently dabbling in computer assisted instruction.

The Solutions

So far, we have considered two problems currently surfacing in ELT due to misdirected efforts in the profession: 1) the problem of poor or insufficient content in the professional domain of ESP and 2) the problem of poor quality CALL applications. The solutions to these two problems are obvious.

To improve ESP content, more ELT scholars need to seriously reconsider their research agendas and realign their interests with the genuine needs of English language learners. They need to begin investigating specific domains of English as they are used in different academic and workplace settings and then begin to outline material appropriate for instruction for the language learners seeking expertise in these areas. Consider the following examples of potential areas for ESP content research.

Example One

To orient students to the range of English text types used by professionals in a specific discipline, an ESP professional would need to arrive at answers to the following research questions:

1. What text types are characteristic of the discipline and its work?
2. How are they named by professionals in the field?
3. What are their functions?
4. Who are their authors and audiences?
5. What are their visual/linguistic characteristics?
6. How are they normally constructed?
7. How do these documents fit into the context of professional activity?
8. What professional taboo should be avoided?
9. Etc...

If the language learners were law school students, for example, they would need to learn how to read and write various legal texts such as casebooks, appellate court decisions, contracts, torts, statutes, regulations, and the like. ESP instruction would include information about legal text structure, legal vocabulary, unique punctuation usage, and document numbering among many other things (Feak & Reinhart, 2001). If the language learners were immigrant farmworkers from Mexico, however, the English text that might interest them the most might be the application labels on farm pesticides so that they could apply the poisons effectively without physical harm to themselves or to others (Gordon, 1999).

Example Two

To assist medical students write for publication, an ESP professional would need to create appropriate instructional material that would be clear enough to assist both native and non-native speakers of English compose journal articles that conform to all the conventions expected by medical journal gatekeepers as well as medical journal readers. Frequently, existing ESP instructions are too vague to be of much use, especially to non-native

speakers. In a 1989 publication published by the Presidents and Fellows of Harvard College for the Harvard Medical School (Hoffman) the instructional material advises, “begin every paragraph or section with an introductory sentence.” When applied to the Results section of a research article, the following examples can be judged perfectly “introductory”; however, none of them are appropriate due to other disqualifying factors. Sadly, the ESP instructions offer no hint of explanation that would enable young writers to see these as inappropriate and enable them to make the necessary revisions.

1. Allow me to introduce my results.
2. Would you like to know my results?
3. Here are my very spiffy results?
4. I think you will like my nice results.
5. I have these wonderful results.
6. Satisfying results follow in this paragraph.
7. Now, intelligent results will be introduced.
8. Just what you’ve been waiting for – RESULTS!

Additional Examples

Other examples of potential areas for fruitful ESP research include defining the fuzzy edges between generic boundaries of various kinds of documents or language used in specific professions such as

1. a technical research report and a technical research article,
2. a briefing and a white paper,
3. constructive criticism and complaint, or
4. praise and sarcasm.

In respect to writing processes, how do professionals normally (and efficiently) compose business letters, lab reports, book manuscripts, product brochures, presentation slides, software installation instructions, help menus, campaign speeches, and other texts that one might use in a particular line of work. Many of these differ considerably from the writing processes taught in most freshman composition courses, and thus require serious investigation and special instruction. If language teachers fail to do this work, growth in specific domains of academic and workplace English will be stunted within the English speaking population.

Finally, returning to the second problem addressed in this paper – that of poor quality CALL applications – the solution here seems obvious too. Though knowledge of computers and computer programming is never disadvantageous to an ELT professional, the development of genuinely professional software and other instructional media requires professional involvement from technology specialists. A cooperative approach, which draws upon expertise in the educational and technological realms, would prove most effective. Good CALL material requires both excellent content and appropriate technological features to properly complement the content. Applied linguists, discourse analysts, composition experts, and similarly qualified professionals should devote their energies to designing accurate and useful content, while computer programmers and technology engineers focus their efforts on high-tech delivery. As education in the Information Age continues to become more complex, cooperative team efforts by highly qualified specialists will continue to yield the best educational fruit. Particularly in light of current trends in education where advances in technology are making it possible for the world’s best educators to create quality content that is sufficient for the entire planet, it seems prudent for educators to develop their expertise in content areas which are most in need of assistance and let educational technology and its engineers develop the computer assisted support to deliver it properly.

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Effects of Controlled-Speech Rate in Video Materials for Listening Comprehension Practice*

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Background

Films and TV news programs are well known as good teaching materials for listening comprehension, especially for intermediate/advanced learners of English as a foreign language. We have studied the effects of these materials since 1995 and found that: (a) documentary news programs are very difficult for most Japanese students but they stimulate the students' intellectual curiosity a lot, and (b) Hollywood type motion pictures are great fun for students to practice listening, and they are excellent materials to listen to various types of authentic English (Edasawa & Imai, 1996 & 1998).

However, one of the difficulties of using such authentic materials in listening practice is the appropriateness of the speech rate for learners. In many cases, such as in long sentences, rapid discourse, sudden change of the context, etc., the natural speed of spoken English is too fast for most Japanese students to comprehend the meaning. Owing to the fast speech rate, it seems that students cannot use the clues of segmentation of sound streams. As a result, students may practice listening earnestly but not improve much because of such incomprehensible input.

A number of studies have been done about the relation between speech rate and listening ability (Flaherty, S., 1979; Machida, T., 1979; Conrad, L., 1989; Griffiths, R., 1990; Kimura, S., 1997; etc.), but as Ellis (1994) says, although there is much evidence to suggest that slower speech may help comprehension, only a few studies have been done concerning to the speech rate per se. Especially there are very few studies using video materials.

We designed a study to investigate the effects of rate-controlled speech of video materials for listening comprehension instruction. The results were reported at the 37th LLA Annual Conference at Fukuoka in 1998 (Edasawa, Y. et al., 1998). There was no significant difference between the slower speech rate class and the normal speed class. But we knew there were a couple of shortcomings in our study and felt the importance of doing another study.

At the same time, in our college, there was another group conducting a similar study about speech rate in listening comprehension using first-year students. They found that in the first term there were significant effects of using slower speed audio tapes, but in the second term, they found no difference between slower speed materials and faster speed materials (Wakamoto, N. et al., 1999).

Given these circumstances, we have decided to repeat our previous study with a wider perspective. In other words, using the same subjects who had listening instruction in their first year at college, we designed a study to see if controlled speech rate materials help to improve students' listening ability in their second year.

Hypothesis

The hypothesis of this study is that a controlled speech rate will improve listening comprehension ability. To prove that, we formed the following four groups according to the speech rate of the materials that students were given in the first year and the second year. Each group was selected at random so that the four groups were counter-balanced.

- Group 1: Normal speed both in the first and second years
- Group 2: Slow speed both in the first and second years
- Group 3: Normal speed in the first year but slow in the second
- Group 4: Slow speed in the first year and fast speed in the second

We examined the effects of listening instruction with slower vs. normal speech materials using listening tests conducted eight times over the two years. We also surveyed students' reactions toward teaching materials to see if they prefer slower speech materials.

Speech Rate

For the speed of the teaching materials, a slower speech rate was made by using Victor HR-VX8, which can reduce the speed about 15% from the normal speed. Words per minute (wpm), duration of utterances, and entire duration of speeches including utterances and pauses were measured by the authors; then the speaking rate was calculated by simply dividing the number of words in the passage by the speech duration. In the news materials, we measured the speed by the speech of the newscasters, which varies from very fast to quite moderate. Therefore, for the words per minute for the news material, we indicate the range of speed. Table 1 shows the speaking rate of the news ("Bilingual Education" and "The Perfect Baby: A Follow Up" in *Focus on American Culture*), and the film (*Titanic*), which were used in the fall term of the class of 1999. In general, in the slow condition, the speaking rates of the news and the film increased 20% and 18% as those of the original, respectively.

Table 1. Speaking Rate of the Materials

	wpm
News: (Normal speed)	174 - 222
(Slow speed)	159.5 - 199
Film: (Normal speed)	191.2
(Slow speed)	164.4

Study 1

Subjects and Measurements

The subjects of this study were 223 women's junior college students majoring in English. We used only the students who took all eight CELT tests for two years; they were divided into four groups according to the materials they used in the second year. Returnees were included in this study. The treatment groups and the number of subjects in each group are given in Table 2.

Table 2. The Treatment Groups and the Number of Subjects

	Speed in 1st year	Speed in 2nd year	Number of subjects
Group 1	normal	normal	56
Group 2	slow	slow	51
Group 3	normal	slow	50
Group 4	slow	normal	66

To measure students' listening ability, we used CELT tests Form A and Form B. Form A was used in the spring terms of 1998 and 1999, and Form B was used in the fall terms of 1998 and 1999.

Teaching Procedures

For the listening course for the second year the students had one 90-minute period per week. It was a required course with 2 credits. Each session was managed as follows.

The first 15 minutes were used to practice for TOEFL, and then students watched a documentary-type news video (ABC News), originally made for native speakers of English, for about 40 minutes, using a textbook. Then students watched a Hollywood movie video for the rest of the 35 minutes, using exercise sheets made by the authors.

The soundtrack of each video was recorded onto the students' cassette tapes for their homework. For Groups 1 and 3, we used the normal speed materials. However, for Groups 2 and 4, we reduced the speed of the audio tape speed 15% using Victor HR-VX8, so that the students listened to the slower speed materials at home. Students were told to listen to the tapes repeatedly at home to answer the questions in the textbook for news material as well as to fill in the blanks for the film material. In class, all students in both control and experimental groups watched and listened to the videos at normal speed.

In 1999, we used the textbook *Focus on American Culture* (Prentice Hall and Regents, 1984). The news segments we picked up were "Manufactures Engage in False Advertising on the Environment" and "Judgment Day" in the spring term, and "Bilingual Education" and "The Perfect Baby: A Follow Up" in the fall term. We used the film *Titanic* the whole year.

Analyzing the Data

To measure students' progress in listening comprehension ability, the scores of the eight CELT tests for two years were analyzed according to the treatment groups (normal vs. slow), by a statistics package, STATISTICA, specifically focusing on the results in the second year. We analyzed the data using Analysis of Variance (ANOVA) with repeated measure as follows.

Table 3. Design of the ANOVA:

Between Group variables:	Speed in the first year (2): 1 (normal) 2 (slow); Speed in the second year (2): 1 (normal) 2 (slow);
Within Group variables:	Year (2) x CELT (4)

About the homogeneity of the groups, there was no significant difference found between the two groups at the beginning of this research by the ANOVA for CELT tests in April 1999. ($F = 0.12$, $p < 0.72$, n.s.).

Listening Ability in the Two Years

First, we examined how much the students improved their listening ability in two years. Figure 1 shows the mean scores of the eight CELT tests of all subjects. CELT 1 was conducted in April, 2 in July, 3 in October, and 4 in January each year. The mean scores of each test are as in Table 4 and Figure 1.

Table 4. Mean Scores of the CELT Tests by Years ($F(3, 657) = 64.65; p < 0.001$)

Group	CELT	Means	N
1st year	1	48.92329	56
1st year	2	55.29426	51
1st year	3	52.03265	50
1st year	4	55.06136	66
2nd year	1	60.43926	56
2nd year	2	65.39671	51
2nd year	3	59.44053	50
2nd year	4	62.64165	66

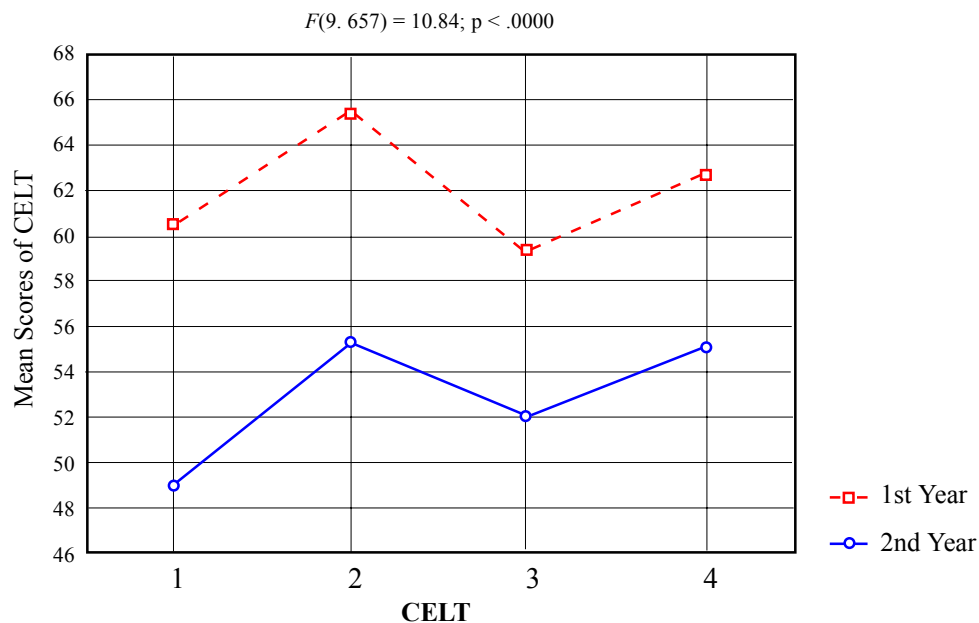


Figure 1. Mean scores of the CELT tests by years

Figure 1 clearly shows that all four CELT scores in the second year are better than those of the first year. We also notice that the students showed improvements in their listening ability when they received instruction but lost progress after the summer vacation both in the first and second years.

Effects of Slow Speed Materials

We examined the effects of using controlled speech rate with teaching materials. The CELT scores were analyzed according to the experimental and control groups (Table 5 and Figure 2).

In this statistical package, the mean scores of the second year CELT tests were obtained by the average of each test in the first year and the second year. In other words, for example, CELT 1 in the normal group was the average of CELT 1 (April) in the first year and CELT 1 (April) in the second year. This is because we looked at the two year's data of the subjects who received normal or slow speed material in the second year.

Table 5. Mean Scores of the CELT Tests by Speed Groups

Group	CELT	Means
Normal	1	54.18236
Normal	2	59.57901
Normal	3	54.71239
Normal	4	57.06223
Slow	1	55.18019
Slow	2	61.11196
Slow	3	56.76078
Slow	4	60.64079

($F(3,657) = 2.86$; $p < .05$)

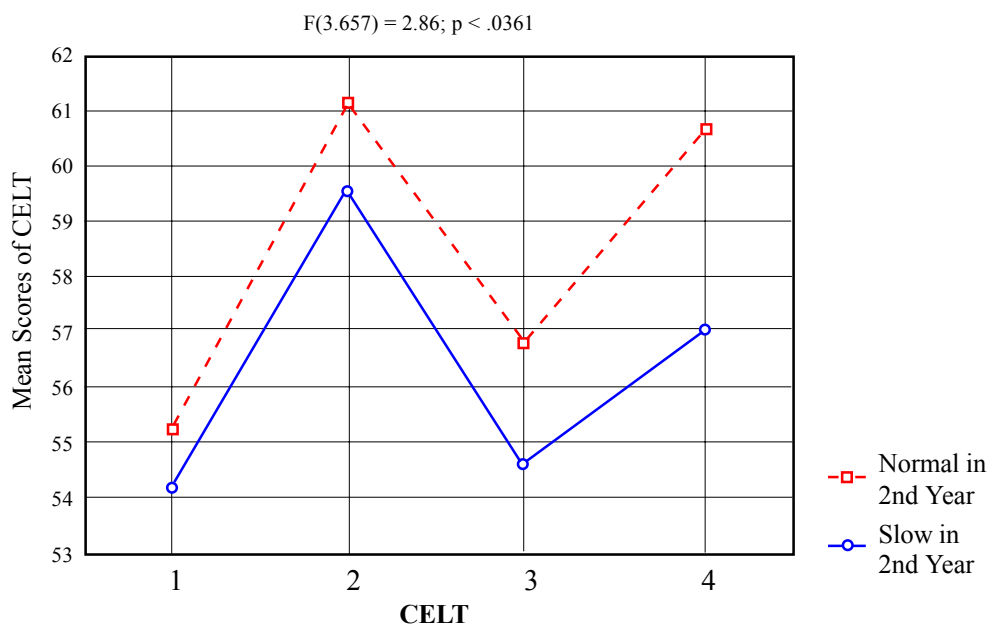


Figure 2. Mean scores of the CELT tests by speed groups

The results show that there are significant effects of the use of slower speed materials in the second year, with the value of $F(3,657) = 2.86$ ($p < .05$). We interpret the results as follows. From Figure 2, we see that in the normal speed group, no matter what listening materials they used in the first year, their progress of listening ability in the fall term is less than that of the slow speed group. The slow speed group improved more in the second term of the second year.

Findings from Study 1

The eight listening comprehension tests have indicated that the subjects improved their listening ability significantly during the two years. Also, we see that the students using the slow speed material showed better progress than those who used the normal speed material in the second year, no matter which materials (normal or slow) were given in their first year.

This is probably because the subjects were in the second year of a junior college. In the spring term, they had to study hard for employment tests or transferring to other schools. So they had high motivation and improved their listening ability. In the fall term, however, after a long vacation and having decided their jobs or next schools, it was hard for them to be motivated in their learning. In such situations, it seems that slow speed materials are more effective than the normal speed materials to keep students' motivation in the second term of the second year.

To support these findings, we conducted Study 2.

Study 2

Subjects and Method

To find supporting evidence for Study 1, we had the same subjects in the study answer a questionnaire concerning the use of the listening materials. The survey was done in January, 2000, when they sat for the last test of CELT at the end of the second year.

The students were asked to give us their evaluation in 5-point scales, Yes/No answers, and/or comments. The questions we asked were regarding the following points.

1. Difficulty of the materials: "too easy" (= 0) to "too difficult" (= 4)
2. Interest in the materials: "not interesting" (= 0) to "very interesting" (= 4)
3. Improvement of listening ability: "not improved" (= 0) to "improved" (= 4)
4. Preference of media: Which is easier to comprehend, a video tape or an audio tape?
5. Awareness of speed difference: Did you recognize the difference of speed between the video tape in class and the audio tape for homework?

Difficulty

The first question is about the difficulty of the materials. The results of the analysis are as in Figure 3.

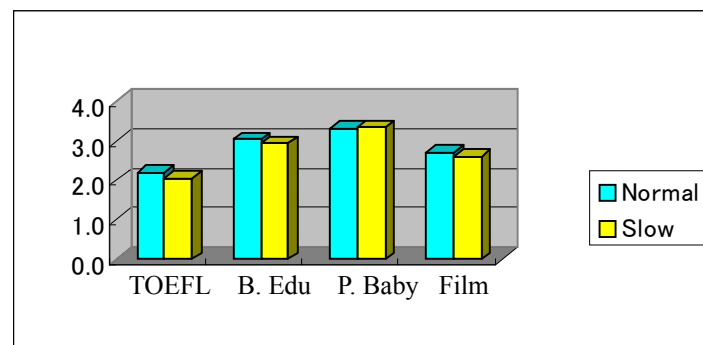


Figure 3. Difficulty

There was no significant difference between the two groups. The graph shows that both groups of students responded that the news materials (“Bilingual Education” and “The Perfect Baby: A Follow Up”) are more difficult than others. They also answered that the TOEFL practice is least difficult. This is because the subjects are not used to the speed of broadcast English, though they are quite familiar with the TOEFL-type listening exercises. The film speed is too fast for them to comprehend conversations, but we assume that other factors, especially the vocabulary and plot made them feel that they understand the story better than news. Takefuta (1979) found that *Love Story* has a quite limited number of vocabulary items and is easy to understand.

One thing we notice here as a common tendency across the two groups is that students in the normal speed group feel it more difficult to comprehend than those in the slow speed group in all materials. Although the difference between the two groups is small and not significant, when we think of the progress of their listening ability in the second term of the second year, i.e., the slow speed group improved more than the normal speed group, we think that different speed groups cause different tendencies to be displayed. These findings imply that slowing the tape speed effects to some extent listening comprehension practice.

Interests

About the students’ interests in the materials, Figure 4 shows the results of the questionnaire.

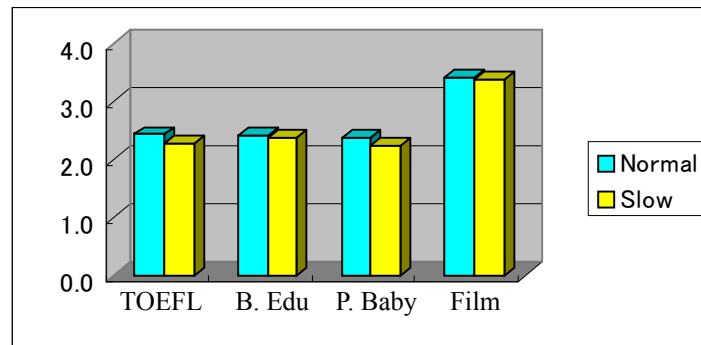


Figure 4. Interests

In this section, we find quite similar tendencies between groups. Both groups show extremely high interest in the film materials, while they rate the other two materials (news and TOEFL) much lower than the film. Going back to the question of “Difficulty,” we remember that the students rated the Film materials less difficult than News. This may mean that students’ strong interest in the film compensated for the difficulty of following the speed of the materials.

Improvement

About the students’ feeling of improvement of their listening ability, we asked them, “Do you think that your listening comprehension skill has improved compared with that of your first year and that of your first term of the second year?” The results are in Figure 5.

Here, we find very interesting results. The slow-speed group students evaluate themselves as more “improved” in all materials than the students in the normal speed group do. For both news and film materials, we find the slow-speed group students tend to rate themselves improved. Although we use the same speed tape for TOEFL exercises in both groups, students in the slow-speed group feel that they have improved more than the normal-speed group. In other words, the use of slow speed tape in the main materials affects the improvement of their general listening ability. This will support the results of the proficiency improvement of the slow speed group in the second term in two years.

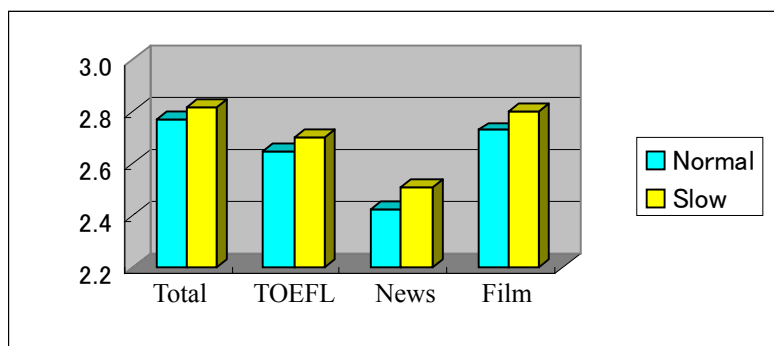


Figure 5. Improvement

Preference of Media

About the students' preference of media, namely video vs. audio, we asked which type of listening materials is more comprehensible. If the students mark "video," that answer is converted to score 1. If they marked "audio tape," that answer is converted to score 2. If they marked "no difference," that is converted to score 3. Therefore, the lower score means less preference for the audio tape and more for video. The results are shown in Figure 6.

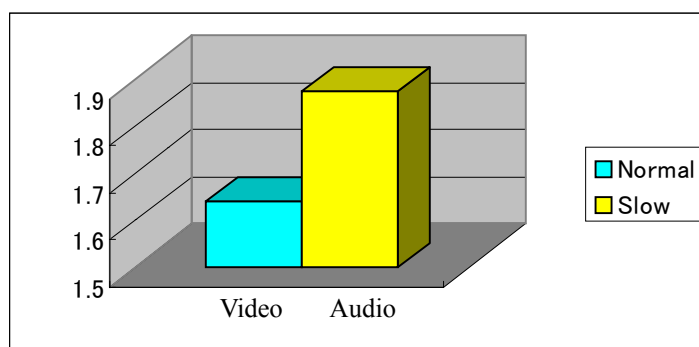


Figure 6. Media preference

Students in the normal speed group have a lower score than the slow speed group students. This means that the normal speed group regards video as more comprehensible than audio. This is probably because the audio tape is too fast for them to comprehend and so they have to rely on the pictures of the video more than the students in the slow speed group.

Awareness of Speed Difference

The last question is about the awareness of the difference of speed. We gave this question to see if the students in the slow group were aware that the speed of the audio tape is slower than that of the video. The results are in Figure 7.

As the results show, 32% of the slow speed group are aware of the speed difference of the audio tape. However, although the audio tape speed in the normal group is the same as that of the video, 22% of the subjects answered they noticed the differences between the audio and video tape speeds. This may be an effect of a leading question, and we think that even the students of the slow speed group are rarely aware of the difference of the speed between the video and audio tape. These results indicate that many students using slow speed materials did not realize the 15% speed reduction of their audio tape, but that their listening ability improved better than the other group. This may say that there is unconscious learning in the slow speed group.

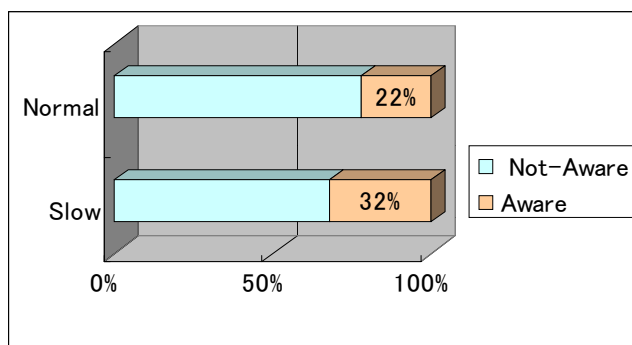


Figure 7. Awareness of speed difference

Findings of Study 2

The questionnaire given at the end of the second term of the second year gives us important information about using slow speed tape for listening exercises. We have found the following.

More students in the slow speed group support audio tape as an effective tool for listening comprehension practice. We think this tendency is closely related to students' satisfaction in the learning process.

To fulfill dictation assignments for the film *Titanic* and to understand the contents of the news material every week, students were supposed to concentrate on listening to the audio tape repeatedly at home. They had to do it at home without having any visual aids. Only the students in the slow speed group had chances to listen to slow speed tapes, more comprehensible for them, even though they did not realize it. It seems that the slowed down audio tape helped students to accomplish the tasks of dictation and other listening exercises, and that the students learn better unconsciously.

Students' self-evaluation about "improvement" explains the reason. The more correct answers they have in dictation, the more their satisfaction increases. Students' self-evaluation about "improvement" which we examined above corresponds to the students' satisfaction of their accomplishment. The accumulating satisfaction inspires them to give themselves a higher self-evaluation. Thus, the slow speed group students evaluate themselves "improved more than the students in the normal speed group."

Conclusion

Based on the results of this study, it can be said that slowly-adjusted video material will help students keep practicing and improve their listening ability, especially when students lack high motivation for learning. Although a number of researchers report negative evidence for the use of slow speed materials, this study provides positive aspects of the use of slower speed texts for listening practice; as Ellis (1994) claims, "a number of studies... provide evidence to suggest that a slower rate aids comprehension (p. 274)." We believe the students' subjective reactions about their feeling of improvement may support the results.

About the tape speed, we have found that reducing speed 15% is not enough for students to realize the difference between normal speed and slow speed. However, when we slow it 20% from the original, sound quality becomes poor and it hinders comprehension. If we can have a better device to change the speech rate and provide students the tape with which they know that they are listening to more comprehensible English, the effects may be more apparent. Further study is necessary.

We would like to continue our research on the slow delivery speed based on the arguments above, and we hope our study will be a help for listening comprehension practice.

Notes

*This is a revised version of a paper presented by the authors at the FLEAT 4 in Kobe, Japan, on August 1, 2000. We would like to express our special thanks to our colleagues, Professor Mine for his help in statistics and helpful comments and Professor Susser for his valuable comments on our early draft.

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Effects of Schema-Building Tasks on Reading Comprehension for Japanese Learners of EFL

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Abstract

This paper addresses two empirical studies on the effects of discussion-based schema-building tasks on the reading comprehension of Japanese EFL learners.

The first study compared three intact homogeneous groups: the Control Group, the Content Group which engaged in content-schema-related tasks, and the Formal Group which engaged in formal-schema-related tasks. Results of a two-way ANOVA (treatment with three levels and questions with two levels) indicated that the formal-schema-related tasks had a significant main effect on comprehension, with no interaction between treatment and questions.

The second study added a new group which engaged in content/formal schema building tasks and introduced a three-week intervention. Results of a one-way MANOVA showed that pre-reading tasks for content/formal schema had the most significant effect on performance on M/C test and summary recall. Despite the limited generalizability arising from the research design, the research suggested the importance of teaching both types of schema.

Introduction

Both theoretical and empirical studies suggest that pre-reading tasks designed to build content and/or formal schema have a significant effect on reading comprehension. Content schema refers to prior knowledge of the topic/theme of the text, and formal schema refers to prior knowledge of the rhetorical organization of the text.

Carrell (1987) compared the differential effects of content schema and formal schema embedded in text information. She compared the effects of four combinations of textual information: familiar content and familiar rhetorical form, familiar content and unfamiliar rhetorical form, unfamiliar content and familiar rhetorical form, and unfamiliar content and unfamiliar rhetorical form, and found that content familiarity affected reading comprehension to a greater extent than familiarity with rhetorical structure. This suggests that content schema may play a greater role in reading comprehension. Carrell (1985) nonetheless contends that teaching text structure can significantly facilitate comprehension and argues for an important role for both types of schema.

However, Koda (1994) raises a question about the efficacy of content instruction, on the grounds that content information is passage-specific and limited in application to other reading materials. She calls for the validation of this argument and its pedagogical implications through further empirical research. The effects of schema instruction may vary widely according to the particular passage and participants included in the experiment. Therefore, there is a need to investigate the effects of schema instruction in a varied learning environment.

Among a variety of open-ended question types for a reading comprehension test, what Nuttall¹ (1996, p.186-187) calls ‘questions of literal comprehension’ and ‘questions involving reorganization or reinterpretation’ require the reader to make objective text-based understanding of the content. The latter is considered more challenging, since it requires the reader to integrate information from various parts of the text using elementary inferencing. Therefore, it may be worthwhile to compare questions of literal comprehension and questions involving reorganization or reinterpretation in order to find out how these different types of questions affect comprehension.

Researchers have been increasingly interested in investigating the mental activities that readers engage in to construct meaning from a text. These activities are called reading strategies. Most researchers divide reading strategies into top-down types and bottom-up types. Proficient readers use both of these strategies; however, the strategies which are of great relevance to schema are top-down strategies. Top-down strategies allow readers to ‘fit the text into knowledge they already possess’ (Richards, 1997, p.18). Therefore, using metacognitive strategy questionnaire, we would like to investigate whether readers bring their prior knowledge of the topic or rhetorical organization to the text.

This paper concerns two empirical studies exploring the effects of these two types of schema-building tasks on reading comprehension of Japanese EFL high school learners. In comparing the effects of schema instruction, this paper also takes into consideration other factors that are likely to affect reading comprehension, i.e., types of questions and perceived use of reading strategies.

Method

First Study

Research Questions

The research questions were formulated as follows:

1. Which type of schema-building task will have a greater facilitative effect on reading comprehension, content schema-related tasks or formal schema-related ones?
2. Which type of questions will significantly facilitate reading comprehension, literal questions or questions involving reorganization or reinterpretation?
3. Is there any significant interaction between tasks and question types?
4. Is there any significant effect of schema-building tasks on metacognitive awareness of reading strategies?

Participants

A total of 111 second-year high school female students in three intact classes participated in the study. The three groups were randomly assigned three kinds of treatment: teaching of content schema, teaching of formal schema and no schema-related treatment. They were called 1) Content Group, 2) Formal Group, and 3) Control Group. Prior to the treatment, a practice TOEFL written test was administered to confirm the between-group homogeneity of English proficiency. The results of one-way ANOVA showed no significant difference in proficiency between these groups ($F(2,108) = 1.442$, $p = .241$).

Procedures

The experiment was performed as follows:

1. Pre-reading tasks

Carrell (1988) stresses the importance of schema-building pre-reading tasks, and she suggested “discussion” as one of the possibilities. Therefore, the two experimental groups were assigned the task of discussing different topics in Japanese. The Content Group discussed topic-related issues: what kinds of animals/plants are considered endangered species that deserve protection and what measures should be taken to prevent the extinction of these species? The Formal Group was given instruction on typical rhetorical organizations of written English discourse categorized by Carrell (1984), and the group discussed which type of the passages correspond to the Contrast/Comparison argumentative type structure, the same as that used in the reading material. The materials used for the Formal Group did not make mention of any environmental topics.

2. A short-answer reading comprehension test in English

All of the groups were tested with a 20-item reading comprehension test. A 25-minute time limit was imposed on all participants. They were asked to read the contrast/comparison type of an expository text on endangered species featuring the pros and cons of the protection of endangered species. After reading the passage, two subgroups of homogeneous proficiency in each group were given different kinds of questions. Half of the students in each group were randomly assigned literal questions using the same or similar wording in the text, while the remaining half in each group were randomly assigned what Nuttall (1996) calls “questions involving reorganization or reinterpretation.” The latter type is more challenging, since it requires the reader to “consider the text as a whole” and/or “make him process the information in the text for fuller understanding”(p.186). All of the learners could refer back to the material while answering the questions provided.

3 A questionnaire on reading strategies in Japanese

After turning in answer sheets, all the groups were inquired about reading strategies through a 5-point Likert-scale questionnaire. Carrell’s (1988) metacognitive awareness questionnaire was a starting point for designing this questionnaire. The original questionnaire was translated into Japanese and the wording was slightly rephrased, so that the learners could understand the content of each item. This seven-item questionnaire inquired about whether the respondents used schema-driven top-down processing strategies. (See Appendix.) The internal consistency coefficient (Cronbach’s alpha) of this scale was .79.

Materials

A 460-word expository text on environmental issues entitled “Environmentalists Are Now Saving Flies?” was selected for use in the study. Readability was determined to be 53.2 according to Flesch Reading Ease and the Flesch-Kincaid Grade Level was 10.3. A Japanese/English glossary list was given for reference for low frequency words that appeared in the text.

Analysis

A two-way analysis of variance (ANOVA) was conducted to find out whether there were any significant effects of pre-reading tasks on reading comprehension. One of the independent variables included three levels of Treatment (No special schema-related treatment for the Control Group, pre-reading tasks designed to build content schema for the Content Group, and pre-reading tasks designed to build formal schema for the Formal Group). The other independent variable was two levels of question type (literal questions and questions involving reorganization or reinterpretation).

To answer the fourth research question, a one-way ANOVA was run in order to identify any significant between-group difference in the metacognitive awareness questionnaire.

Results

Descriptive statistics for both reading test scores and the questionnaire are shown in Tables 1 and 2.

Results of a two-way ANOVA showed a significant difference in main effects for Treatment: $F(2,105) = 4.015, p < .05$ and for Questions: $F(1,105) = 36.771, p < .001$. No interaction was found: $F(2,105) = 2.271, p = .108$. n.s. A subsequent LSD post-hoc test revealed that the Formal Group surpassed the Content Group ($p < .01$).

Results of a one-way ANOVA for Reading Strategy Questionnaire confirmed no significant differences between any of the groups: $F(2,97) = .918, p = .403$, n.s. The number of respondents was 100, since 11 respondents failed to answer all of the questionnaire items.

Table 1. Results for Test Scores

Group	Control	Content	Formal
RQ: M	7.78	7.79	8.53
RQ: SD	4.80	4.45	3.92
	(N=18)	(N=19)	(N=17)
LQ: M	13.05	10.21	14.79
LQ: SD	3.29	4.50	2.95
	(N=19)	(N=19)	(N=17)

Table 2. Results for Reading Questionnaire

Group	Control (N=27)	Content (N=38)	Formal (N=36)
M	2.80	2.84	2.89
SD	.67	.82	.76

RQ: Questions involving reorganization and reinterpretation

LQ: Literal Questions

A Pearson-Product Moment Correlation between test results and the questionnaire showed a significant, but weak correlation. $r = .302^*, p < .01$.

Discussion and Limitation

The pre-reading tasks designed to build formal schema significantly improved reading comprehension. However, the results cannot be generalized due to the following reasons: First, the treatment period was short. It could be postulated that more practice would be needed for content-schema-building tasks to have a significant effect on reading comprehension. Second, the mean scores indicated that the text used for the comprehension test was too difficult for the participants in terms of length, sentence structure, and the number of unfamiliar words. Third, the endangered species mentioned in the reading text, i.e. flies, upset the participants' prediction. Content group students confessed that endangered species reminded them of rare species such as Japanese crested ibises and pandas. Therefore, the pre-reading tasks for the Content Group did not provide them with an appropriate schema.

Second Study

Based on the reflection of the first study, a second study was conducted with the following features: First, a new group which engaged in pre-reading tasks designed to build both content and formal schema was added. Second, three sessions of intervention were introduced before the administration of the reading test. Third, the assessment of reading comprehension was performed through a multiple-choice (M/C) test and cloze-type summary recall instead of a short-answer comprehension test. Lastly, an easier text in terms of readability and passage length on the same topic was used for the reading test.

Research Questions

The following research questions were addressed:

- (1) Which type of schema-building tasks will significantly improve the score for Multiple-Choice type reading comprehension test?
- (2) Which type of schema-building tasks will improve the score for cloze-recall?

Participants

A total of 140 high school second-year female students divided into four intact groups participated in the study. They were quite similar to the participants in the first study in terms of demographic features.

Procedures

1. A pre-intervention cloze test

A 50-item cloze test (KR-21 = .71) was administered to check the between-group homogeneity of English proficiency. Results showed no significant between-group difference ($F(3,136) = 1.968, p = .122$ n.s.).

2. Introduction of three-session pre-reading tasks

Each group was randomly assigned one of the following treatments. Pre-reading tasks related to content schema were given to the Content Group. Pre-reading tasks related to formal schema were given to the Formal Group. Pre-reading tasks related to content and formal schema were given to the Content/Formal Group. Texts on environmental issues were given to the Control Group as reading exercises; however, no pre-reading tasks were provided.

3. Reading comprehension test

After reading a passage on endangered species, an eight-item multiple-choice reading comprehension test was administered in English.

4. Summary recall test

A kind of cloze-type summary recall in Japanese was administered, on condition that learners could not refer back to the text.

Test Material

A Comparison/Contrast type of expository text on the pros and cons of hunting was used. The text was 337 words long and difficulty as determined by the Flesch Reading Ease was 72.3 and Flesch-Kincaid Grade Level was 6.6. A Japanese/English glossary list was given for reference.

Analysis

A one-way multivariate analysis of variance (MANOVA) was run with four levels of Treatment: No special schema-related treatment, Pre-reading tasks designed to build content schema, pre-reading tasks designed to build formal schema, and pre-reading tasks designed to build both types of schema. The dependent variables were test scores on an eight-item M/C and scores on a prompted summary recall which had a total score of 15 points.

Results

Results of descriptive statistics are shown in Table 3.

Table 3. Descriptive Statistics

Group		Control (N=36)	Content (N=33)	Formal (N=34)	Content/Formal (N=37)
M/C	M	2.67	2.94	3.59	3.38
	SD	1.37	1.25	1.48	1.30
Recall	M	5.44	7.67	7.29	8.11
	SD	2.71	2.20	2.25	2.08

Results of MANOVA were significant (Wilks' Lambda = .797 $F(6,270) = 5.420$ $p < .001$). The subsequent F tests were significant: for M/C test, $F(3,136) = 3.34$, $p < .05$; for Recall, $F(3,136) = 9.14$, $p < .001$. Results of post-hoc test (LSD) are shown in Table 4.

Table 4. Results of Post-hoc Test (LSD)

Test	Group Difference	<i>p</i>
M/C Test	Formal > Control	= .005
	Formal + Content > Control	= 0.26
Recall	Formal > Control	= .001
	Content > Control	= .000
	Formal + Content > Control	= .000

Results showed that the Formal/Content Group had the best test scores for both types of reading assessment. The Formal Group and the Formal/Content Group significantly surpassed the Control group in both types of reading test. However, the scores for the Content Group was higher than those for the Control Group only in M/C test scores.

Discussion

Results indicated that the pre-reading tasks designed to build both types of schema had the most significant effect on recall test. Second, the pre-reading tasks designed to build formal schema had the most significant effect on the M/C test. On the other hand, the Control Group had the worst test scores for both types of assessment, showing some effects of intervention on reading comprehension.

The results of the M/C test scores showed that the Formal Group and the Formal/Content Group significantly surpassed the Control Group. The Content Group was the second worst, and it was not significantly different from the Control Group. Indications are that the participants had difficulty decoding and understanding the meaning of the text regardless of schema-building intervention. Their failure to understand the text may have overridden the treatment effects. Or the M/C test used in the experiment may not have been amenable to schema-

related intervention.

Results of recall test scores showed that all experimental groups significantly surpassed the Control Group. Discussions of related topics and/or understanding the rhetorical structures of the text certainly improved their understanding and memory of the text.

Limitation of the two studies

First, the M/C test used in the experiment was not significantly sensitive in discriminating between-groups differences. Although the readability indices indicated that the reading passage used in the second study was easier than that used in the first study, wordings used in the distractors were speculated to be difficult. Second, the within-group difference was large enough to override the treatment effects. Third, the number of passages was limited and the number of M/C test questions was also limited. Using more passages and a greater number of test questions would be valuable in increasing the reliability of the test.

Conclusion

The pre-reading tasks designed to build both types of schema significantly improved reading comprehension, although the results are not generalizable. The results of reading comprehension could vary according to a number of parameters: the participants (age, L2 proficiency, the length of study, and majors), text (readability, the type and genre of text organization), assessment methods (M/C test, summary recall, and total recall), and intervention (the type, length and intensity of the intervention). Therefore, further studies are needed to explore the effects of pre-reading tasks by taking these factors into consideration.

Note

1. The other types of open-ended questions in Nuttall's (1996, pp.186-187) list require the reader to make personal responses to the text, subjective judgements and interpretations about the content of the text, and speculations about the author's intention.

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Other Materials

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McLean, P. (2000). *Hunting. Discussing issues II*. pp. 6-7. Tokyo: Yumi Press.

Appendix

Metacognitive Awareness Questionnaire

When you read in English,

1. I anticipate what will come next in the text.
2. I guess at meanings of unknown words using clues from the context.
3. I guess the overall meaning of the text.
4. I relate information which comes next in the text to previous information in the text.
5. I grasp the organization of the text.
6. I relate the text to what I already know about the topic.
7. I integrate the information in the text with what I already know.

Effects of the Use of the English Material: ALC NetAcademy and the TOEIC Test

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Abstract

This study reports on the possibility of a correlation between computer assisted learning and test results, that is, a correlation between the use of English material, ALC NetAcademy, and the scores on the TOEIC test. Students started using the ALC NetAcademy software in May 1999 and continued to use it until the end of January 2000. Forty-eight students took both TOEIC tests conducted in June 1999 and in February 2000. The first actual TOEIC test score was compared with the second test score to see if there was any improvement. Then students' improvement in the various dimensions of language ability in the TOEIC test practice course in the ALC NetAcademy was measured in relation with the level diagnostic test. Both results were analyzed to see if the use of computerized material had affected the actual TOEIC test scores and overall English proficiency.

Background

The focus of this study was to see if there was a correlation between computer assisted learning and test results, that is, a correlation between the use of English material, ALC NetAcademy, and the scores on the TOEIC test. The ALC NetAcademy was installed in May 1999 at the computer laboratory of our school to meet the goal of cultivating students' overall English proficiency so that they can take an active part in the world internationally. Students' English proficiency as a basic skill must be improved all-around, specifically to the level to be able to communicate with people in other cultures. Students in our school started using the ALC NetAcademy software in May 1999 to get used to the common question patterns the actual TOEIC test has. The software consists of four courses: a level diagnostic test, listening build-up course, reading build-up course, and TOEIC test practice course. The level diagnostic test had a vocabulary diagnostic test and a listening diagnostic test. Eighty-nine students took a TOEIC test in June 1999 and seventy two students in February 2000. Only forty-eight students (22 sophomores and 26 freshmen of the British and American Cultural Studies Department) took both tests and those students' scores were used in this study. The first actual TOEIC test score was compared with the second test score to see if there was any improvement. Then students' improvement in the various dimensions of language ability such as vocabulary knowledge, reading, and listening in the TOEIC test practice course was measured in relation with the level diagnostic test of the ALC NetAcademy. Both results were analyzed to see if the use of computerized material had affected the actual TOEIC test scores and overall English proficiency, and if there is a correlation between the test scores and the length of time that students worked on the software material.

Objectives

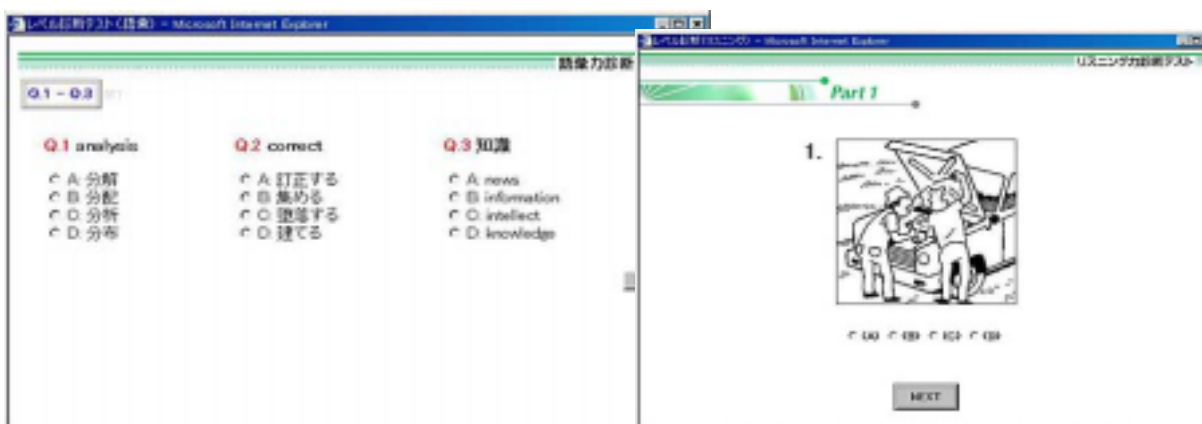
1. To enhance students' basic English ability to the level of being able to communicate with people in different cultures.
2. To find out if there is a correlation between the use of computerized material and the TOEIC test scores; if there is a correlation between the use of this material and students' improvement in the various dimensions of language ability such as vocabulary knowledge, reading, and listening; and if computerized material has affected their overall English proficiency.

Summary of ALC NetAcademy

ALC NetAcademy consists of four courses. The following are summaries of these courses.

Level Diagnostic Tests

Students can measure their own English ability by taking a vocabulary diagnostic test and a listening diagnostic test. These diagnostic results help set up a standard for them as to what materials in a listening ability build-up course and a reading ability build-up course they should choose to study.



a. Vocabulary diagnostic test

b. Listening diagnostic test

Figure 1. Level diagnostic tests

Listening Build-Up Course

1. A function to change voice speed to 5 levels is available so that students can play back the listening material according to the students' level without changing the pitch of narration.
2. A function with a check mark under each speaker button on the screen to check listening helps train students' intensive listening to the parts they did not hear correctly.
3. Students can make their own personal vocabulary notebooks in which they register after they choose the words they do not know or have not learned yet. When students click words they do not know in the text they listened to, the words are shown in blue and are indicated in the column of the vocabulary window.



Figure 2. Listening build-up

Reading Build-Up Course

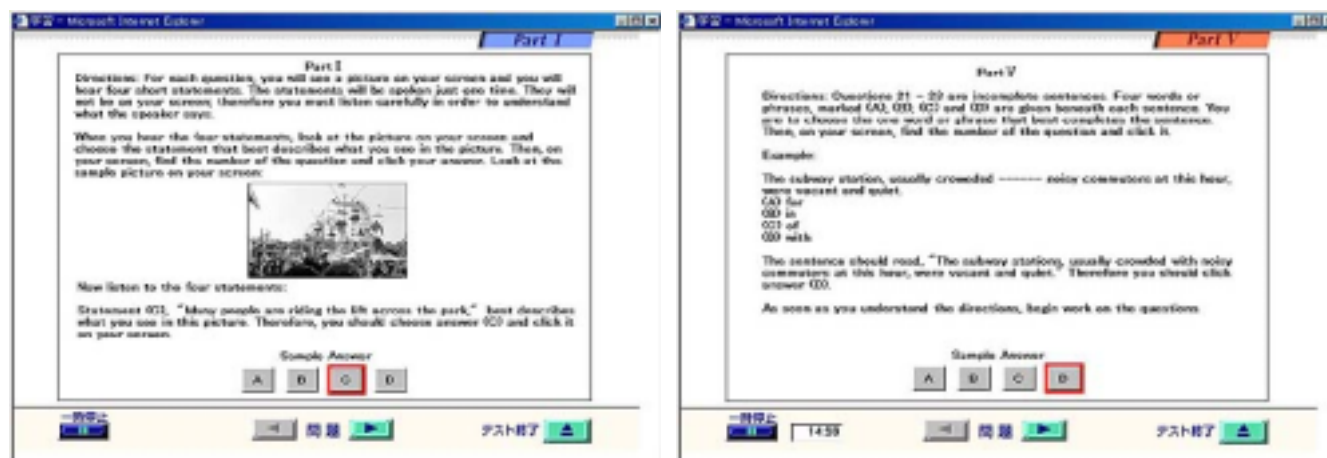
1. It is possible for students to measure their reading speed (words per minute), which enhances their motivation for learning aiming at 200wpm.
2. There are 4 kinds of speed reading training functions. According to the speed that students set, English sentences are shown on the screen so they can read them feeling the actual reading speed.



Figure 3. Reading build-up course

TOEIC Test Practice Course

1. Students can practice the common question patterns which the actual TOEIC test has.
2. Students can get the results of answers instantly after answering questions. If they did not answer them correctly, they can try again the questions they did not give right answers to.
3. Students can jump to the explanation in detail for the questions that they found difficult listening to.



a. Listening section

b. Reading section

Figure 4. TOEIC test practice course

Subjects

Students who took Comprehensive English, Reading, Listening in 1999 and also took TOEIC tests in July 1999 and February 2000. (26 freshmen and 22 sophomores of the Department of British and American Cultural Studies, total 48)

The Ways Students Studied and Results Analyzed

They started using ALC NetAcademy software in June 1999 in class and after class. The students' two TOEIC test results and their study history of ALC NetAcademy materials were analyzed.

The Diagnostic Standard Set by the ALC NetAcademy Company to Show Student Levels

1. A vocabulary diagnostic test:

Vocabulary was chosen from the vocabulary data base which ALC NetAcademy Company originally made, and the way questions were presented was variable according to the students' answers. There was an 8 level evaluation.

2. A listening diagnostic test:

Students' ability was evaluated according to how fast they reacted to the listening text, how much they understood the sentence structure, and how much they grasped the content of the discourse. There was a 5 level evaluation.

Analysis of Results

This section discusses how much improvement students have made by using ALC NetAcademy software.

Students' analyzed results by the level diagnostic test of ALC NetAcademy

1. A vocabulary diagnostic test:
 Very weak in vocabulary. Overall evaluation was 1.75.
 A little more than 10% of the students were evaluated as 4.
2. A listening diagnostic test:
 How fast they reacted to the listening text, 45.1%
 How much they understood the sentence structure, 53.1%
 How much they grasped the content of the discourse, 45.9%
 Levels of the listening diagnostic test were divided as follows on the base of the percentage of the correct answers from part 1 to part 2.
 0 = < beginning level < 20%
 20 = < beginning level + < 40%
 40 = < intermediate level < 70%
 70 = < intermediate level + < 90%
 90 = < upper level
3. Overall evaluation:
 Students evaluated as 2: They tend to be weak in reacting fast to the listening text, but their grasp of the content is evaluated as rather average.
 Students evaluated as 3: Two students were very strong in grasping the content but very weak in reacting fast to the listening text. On the other hand, 8 students were very weak in grasping the content but very strong in reacting fast to the listening text.
 Students evaluated as 4: Students were strong in understanding the sentence structure and in reacting fast to the listening text, but their grasp of the content of the discourse was much weaker than the other two.

An analysis by the learning history of build-up courses of ALC NetAcademy

1. A listening build-up course
 Students took 15.5 minutes to study one unit on average. They spent more time on studying Discovery and First Listening Sections but not much on Review and Speed Listening Sections.
- 2) A reading build-up course
 Students took 11.9 minutes to study one unit on average. They put the most weight on studying the Discovery Section.
3. A TOEIC test practice course
 - (a) One student who had the most correct answers in one unit spent 57 minutes to finish one unit.
 - (b) The time students spent on the material became less as they finished each unit because they seemed to get accustomed to using the material. The number of correct answers varied each time they studied units.

- (c) Students had more correct answers in listening rather than in reading because of a lack of concentration and of vocabulary in reading.
- (d) No improvement in the results was made even though they practiced the same materials many times in short time.
- (e) Students who studied the same materials constantly showed improvement in reading.

TOEIC Test Results

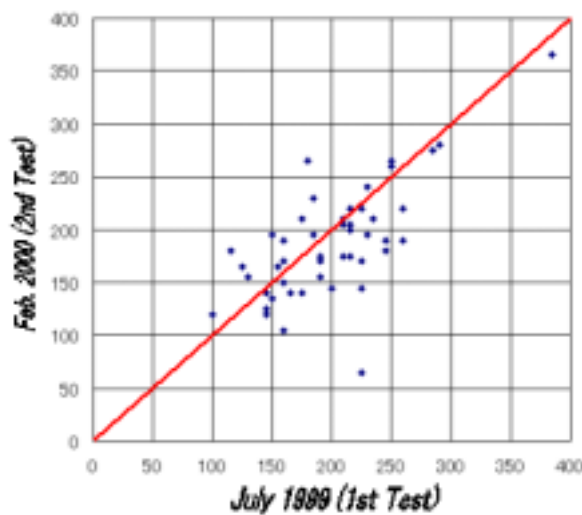


Figure 5. TOEIC test listening results

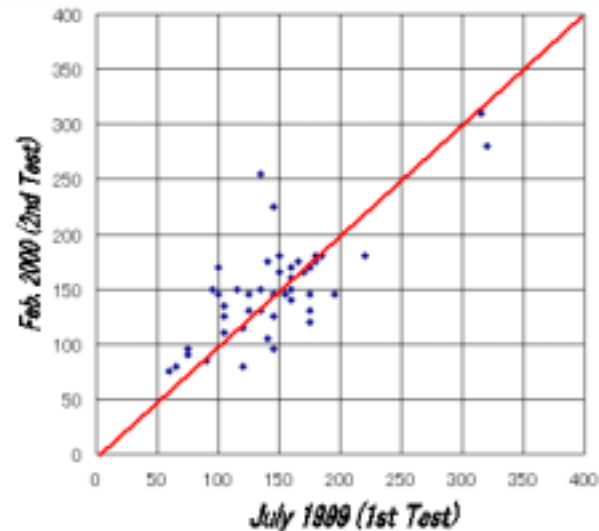


Figure 6. TOEIC test reading results

An Analysis of the TOEIC Test Results

1. Only a few students achieved a rather high score, about 400 in the listening test, but in general, many students' scores are concentrated on between 150 and 250. Much improvement in scores on the test was not seen in the second test, but 35% of the examinees showed a little improvement in listening on the second test.
2. Some students scored about 300 in the reading test, but most of the students' scores are concentrated between 100 and 200. 44% of the examinees showed a little improvement in reading on the second test. Among those examinees showing improvement, students who studied the material of the TOEIC test practice course repeatedly were included.
3. 40% of the examinees showed improvement in the total scores of listening and reading on the second test.

Students' Reaction after Having Used ALC NetAcademy Materials

1. It was convenient for them to be able to practice the materials many times according to their own pace and to be able to check their answers instantly.
2. It was easy to listen to the recorded voice.
3. The speed of the listening materials were adjustable to their own ability, and they could speed up when they got used to them.

4. The content of the reading materials was difficult, and the quantity of them was too much.
5. The level of the materials overall was difficult, and specially the vocabulary was likewise. The TOEIC test practice course was also very difficult.
6. Topics dealt with in the materials were rather abundant, but the topics related to current affairs were too little.

Summary and Examination

1. Students whose objectives in studying English were clear used the ALC NetAcademy materials regularly.
2. Many students thought of the materials as convenient because they could study them according to their proficiency.
3. Between listening and reading build-up courses, students used the former course more often than the latter. Only 46% of the subjects used the latter course, and 31% out of this 46% showed a little improvement in the reading section of the second TOEIC test.
4. Polarization in practicing the two courses was probably due to the fact that students did not have much time to concentrate on both courses.
5. Students started to use the materials in June, and their actual use of them was roughly for 4.5months till February when they had the second TOEIC test. How often they used the materials varied from student to student, and the number of the students who took two TOEIC tests was too little for us to gather data.

Problems to be Solved to Enhance Learning Effectiveness

1. ALC NetAcademy materials would be much more effective if used in classes until students become accustomed to using them rather than students studying them by themselves in their free time.
2. It would be necessary to make students clarify the objectives of their learning and have motivation to learn.

Research Themes for the Future

1. We would like to compare the difference in learning effect between the two groups: a group who uses the ALC NetAcademy and a group who does not.
2. We would like to compare the difference in learning effect after using ALC NetAcademy among the groups divided according to the placement test conducted right after their enrollment.

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English Teaching through Internet: A Web-Assisted Course Design

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Abstract

The traditional way of teaching plays great emphasis on the role of the teacher and the necessity of textbooks in teaching. However, the advance of computer technology and web development in recent years has had a great impact on teaching concepts and methods. Distance teaching and learning is not only possible, but has also become more and more popular. Teacher-oriented teaching activities have gradually changed to student-oriented learning activities. In addition, with the help of electronic media, learning can be done without physical contact, totally beyond the limitation of time and space.

In this paper, I propose a web-assisted English course design, which aims to help improve the students' listening and speaking abilities, since they are the two weakest areas in most EFL students and also the hardest parts to practice for students when they are at home without a learning partner. The material on the web is mostly audio files and can provide students unlimited opportunities to practice listening as well as review the parts they missed or felt confused about in class. More challenging learning tasks can also be added for more advanced students to upgrade their abilities. In this way, the web-assisted course design can improve many defects of traditional English classes.

Introduction

Traditional language teaching emphasizes a lot on the role of the teacher and the necessity of textbooks and language labs in teaching. The teacher gives students guidance and instructions on what to learn and how to learn the language material. In oral practice, the teacher is even more important in acting as a conversation partner as well as in giving an imitation model in language use. The textbook, in addition to providing learning material in the classroom, is also a great help for review after class. Also, in order to let students feel what the target language is like in real use, authentic language material in audio and videotapes are played and shown to the students from time to time. Hence the language lab becomes essential equipment in language teaching.

The English course in college meets some difficulties with the traditional teaching model. First, the total learning time is not enough. In high school there are usually 5 to 7 hours of English class every week, and students, under the pressure of entrance examination, usually spend another several hours reviewing the material learned in school. Yet, in college, the English class meets only two hours a week and students seldom review English after class. Since language learning has to be done with a teacher, the learning is limited and can only be done at school. Next, the off-class review or practice is limited or focused mainly on the written form of English. Without the interaction with the teacher and other classmates after class, the listening and speaking part of the language is impossible to practice. Even for those students that do review at home, the language skills they reinforce is on the cognitive side, such as vocabulary, grammar, reading etc. rather than on the motor side, such as listening and speaking. Moreover, the learning media or equipment is not available most of the time. Students have the opportunity to be in the lab to practice pronunciation or watch videos only once or twice a semester. Since the language lab usually is not open for students after class, teachers assign mostly written homework instead of listening or speaking exercises.

However, with the help of web technology, the above shortcomings in traditional college English course can be overcome. Unlike the time and space limit in formal classes, the total learning time can be increased since learning can be done via Internet. The off-class practice can be improved in both quantity and quality. The amount of practice time can be increased since the Internet is available anytime and anyplace. The review learning can also be extended to listening and speaking since the sound transmission on the Internet is possible and common now.

The aims of this paper are three folds. Section One introduces the change of teaching media and the motivation of this course design. Section Two discusses the characteristics of language teaching and learning, and how the use of Internet can assist the English teaching. Section Three presents a web-assisted course design in teaching an English reading class, showing that with the help of the internet students can also learn to listen and speak via the materials or activities established on the web. Section Four concludes this paper by discussing the shortcomings and possible future improvements of this web design.

Characteristics of language teaching and internet assistance

Language learning has many special features in contrast to other academic fields. First, language learning needs a lot of practice in addition to the learning in class. That is, language learning requires a lot of motor training aside from the cognitive knowledge of the target language. That is why mere memorization of vocabulary or understanding of grammar rules is not equal to the mastery of the language. Unfortunately, English classes meet only once a week and the class size is usually large. Limited contact time and large class size make the motor training impossible in regular classes.

Second, language learning is individual. Different learners, due to the different efforts that they have made, are usually at different linguistic levels and learn at different paces. So, they might need different amounts of time to learn the same linguistic materials. But in a language class of 60 or more students, it is hard to attend to everyone's need and give them proper feedback individually.

Third, language learning, for a large part, is a private and internal process. Although language is used to communicate with others as a final purpose, the previous learning stages are mostly done in the learners' private world. However, the language class usually is not a very comfortable practicing environment, for learners have to use the target language awkwardly in front of their classmates. Often they feel nervous and embarrassed during these learning processes. Chinese students, who are usually shy and afraid of making mistakes, tend to avoid practicing in front of classmates and thus lose many learning chances.

Fourth, language learning is a multi-skill acquisition. Unlike other academic fields, which emphasize the understanding of the knowledge, language acquisition has four phases, each reinforcing the other. Yet, in a non-English-speaking country, English as a Foreign Language (EFL) program is usually successful in reading and writing areas but not in speaking and listening areas. Frequency of contact is part of the reason. Another major reason is because reading and writing are basically cognitive abilities and speaking and listening are more of motor abilities. The former abilities can be built through mere understanding and the latter abilities, through the equal amount of efforts and knowledge plus lots of contacts, practices, and reinforcements.

Web-Assisted course design

Many web-assisted courses have been designed and set up to help English teaching. Kimball (1998) states that the internet-assisted course design provides a virtual, but interesting, environment for the learning of medical English. Students have profited a great deal from such simulations of clinical problem solving on the Internet. Leahy (1998) observes the use of satellite TV and CALL can be a solution to the problems caused by reduced contact time. And in her case of legal English training, the evaluation shows an overall positive learning experience. Peterson (1998) and Dunkel (1991) both suggest the use of computers and network to design a virtual

learning environment. Nelson (1998) highly recommends the utilization of Internet in vocabulary teaching, Phinney (1991) in writing, and Backman & Palmer (1996) and Brown (1997) in language testing, among others.

Pedagogical consideration

Sound and meaning association. A new word in the target language consists of three components: the written form, the meaning, and the sound. Most EFL students can form a good tie between the written form and the meaning, but the sound component of a word is often neglected. Hence it is common to see a learner's visual vocabulary larger than his audio vocabulary. The learning activities on the web aim to increase students' audio vocabulary.

Brown and Payne (1994) report that students use a five-step strategy to learn new words and one of the steps is to develop a memory chain between the form and the meaning. The form actually refers to both the written and audio forms. The web-assisted activities focus on strengthening the memory chain between the audio form and the meaning. Oxford (1990) proposes that success in maintaining the newly formed memory connection depends on several specific memory strategies. Nelson (1998) suggests that two strategies can easily be incorporated into web-based activities, that is, using mechanical techniques to memorize new words, and placing new words into context, such as a meaningful sentence, conversation, or story.

Review of the course material. Language is learned most efficiently through high frequency of contact; hence students' after-class review of the material taught in class is necessary. As mentioned above, listening and speaking are the two areas that most students have difficulty to review or practice. In this web-assisted course design, the articles in the textbook and all the learning exercises I designed are all presented in an audio form and put on the web for students' free access so that they can review the lesson and do the exercise by listening to the material on the web.

Laddered arrangement of learning activities. Various designs of learning practices can be arranged on the web for different levels of students. One disadvantage of the traditional language class is that every learning practice the teacher conducts in class is meant for all students and no exception. Slow learners hence face a lot of frustration in class and gradually lose their interest in learning; while fast learners often feel bored because the learning activities are often times no challenges to them at all. Web learning activities designed in various levels can solve this difficulty.

Many researches have investigated on what sorts of input are most efficient for ESL or EFL learners. Ellis (1984a) suggests that a high quantity of input directed at the learner could facilitate rapid development. In addition to quantity, Krashen (1982) and Long (1983b) argue strongly that second language acquisition is dependent on the availability of comprehensible input, i.e. the input that contains exemplars of the language forms which according to the natural order are due to acquired next. Input must consist of 'i + 1', as proposed by Krashen (1982:21). With various levels of learning activities, we hope to provide students with not only the large amount of practice but also the right level of practice.

Individualization and feedback. A web-assisted course design can help alleviate the problems of large class size and limited in-class time, and make the learning individualized. On the web, students can work at their own paces and receive feedback when they need it. The advantage of the web-based activity is its ability to provide instant interactive, individualized instruction and feedback and never feel tired. Learning activities are arranged from the simplest to the most difficult and students can select the activities that are suitable for their level and gradually move upward. The purpose of this arrangement is to individualize the practice activities so learners can reduce their frustration to the minimum. Usually in-class activities are meant for everyone and individualization is hard to reach.

Pleasure in learning. Schumann (1978) as well as many researchers observed that the formal in-class instruction influenced the learner's production only in test-like situations, while normal communication remained

unaffected. Other researches (Gardner, 1980 etc.) on second or foreign language acquisition also found that the learner's motivation and the environment play a very important role in language learning. Hence, to have the best result, the learning environment and the learners' interest in learning are probably as critical as the teacher's lectures in class, especially in the college, where the English class meets only two hours a week but students can play on the web for hours a day. Language learning needs high frequency of contact and Internet is a good way to attract students' attention and to compensate for the insufficiency of formal school instructions.

Students learn much from the activities they enjoy; that is, they also learn incidentally. However, language teachers need to know what activities are both fun and educational in language learning. Fong (2000) tests 18 activities and proposes that singing English songs and watching English films are most effective and fun in helping students acquiring English. To attract students to learn on their own on the web, we should mix fun and interest with the learning activities we design.

Design of the Web-assisted Course. In this paper, this web-assisted course is put under the course 'English reading', which can be found at my personal web site at (140.138.169.4/Hsin-world). On the first page an introduction of the course is given. Information includes the objective and content of the course, the lecturer's name and ways of contact, class schedule, course requirements, textbooks or software needed, etc. Students can get the general information about the course and get prepared accordingly. Picture One below illustrates this page.

Class content review. The textbook used in this English reading course is *Concepts and Comments* by P. Ackert and A. Nebel. There are 25 units in the book; the web is then sub-divided into 25 sub-web pages. To help students review the article taught in class and also practice listening, the article in each unit is presented in audio files instead of text files. Students can practice listening or speaking by repeating after the reading sentence by sentence. Hence, in addition to reviewing the written part of the unit, students can also practice listening and pronunciation on the web after class.

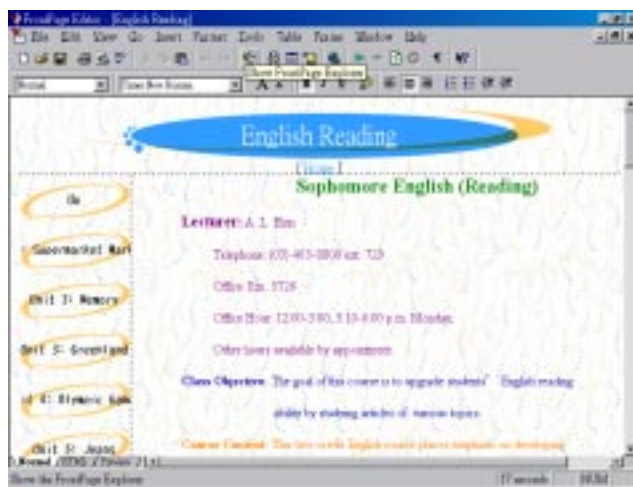


Figure 1. Course syllabus and introduction



Figure 2. Review of the course

Learning-assisted activities. Aside from the material in the textbook, some other learning activities are also put on the web to give students extra practice or a greater challenge. These activities are arranged in order of complexity, from the easiest to the most difficult. Picture Three shows these learning activities.

Interesting English activities. Several studies (Gardner 1980, Savignon 1976, among others) show that interest and motivation are one of the major reasons why students can learn English well. If the web language learning activities can not only help students in their course studies but also arouse their interest in learning English, the English teaching will have double effect. Based on this concept, I designed first the 'English Songs' since singing English songs have always been a popular activity among students. The lyrics are also given but with

several blanks. With this design, we hope that when students are filling in the blanks, they will get an impression of the English vocabulary and sentence patterns. This activity is illustrated in Picture Four below.

Visual pleasure is also one advantage of the web learning over the traditional English class. Since the web can provide almost unlimited source of media in teaching, we might as well make good use of this advantage and make the English learning as fun as possible. Here I use the Power Point software to design a short film, in which the imperative sentence pattern of English is taught. With the beauty and fun of the pictures, students could easily learn the patterns fast and with joy.

Motion pictures can also be provided on the web to assist learning. To reduce the size of the video file, we can use the Real Software and make the film easier to transmit on the Internet. Students learn the gesture and body movement when they watch an English skit, and this is also one important part of language learning. Picture Five shows this activity on the web.



Figure 3. Learning activities



Figure 4. English song activity

Self-Testing and Self-Challenging. All of the above learning activities focus on English accomplishment in one semester. However, the final goal of language learning is aimed to build up a general proficiency in all aspects of the language. Hence, we can from time to time let students have a general English ability test so that they will understand their progress in upgrading their English abilities.

Presently, the most common and standardized English proficiency test is the TOEFL test. Therefore, a couple of TOEFL simulated tests are put on the web for students' practice. Tapescripts can be provided if some long passage listening is too hard for them at the beginning. Students, when doing the tests, will also pick up some useful words and expressions in English. Picture Six below displays the arrangement of TOEFL practices on the web.



Figure 5. Learning English with fun



Figures 6. TOEFL practice

Conclusion

Tough a novel tryout, the networked teaching or learning is actually receiving a lot of positive evaluation in research. Anderson et. al. (1999) reports that the internet has much potential to provide a unique environment for language teaching and learning. It is observed that participants using the web-learning program exhibit a greater proportion of conscious recollection of learned material than those who learn using traditional methods. Harrison (1998) highly recommends the use of the WWW for teaching with authentic materials and using collaborative tools. He foresees the rapid growth of the agentive use of the Internet for teaching Japanese and suggests language teachers adapt to the trend and make good use of it.

However, this web design certainly is not perfect and several areas can be improved. First, the pictures on the web are all static without animation. In the future, more interesting effects on the web can be added and, with the advance of web technology, the arrangement and design of web activities can be made both efficient and attractive. Another area for improvement is the feedback messages. Currently only the correct answer is provided as the feedback. Later, different designs of feedback can be supplied for different levels of students.

With all these assisting learning activities on the web, we can break almost all the obstacles we faced in the traditional language class. Language labs can be replaced and learning can be conducted on the learner-centered basis and at the students' own pace. Yet the present web-assisted course design is rough, using only the most basic functions of the web, i.e. long distance and free access. Nevertheless, it is simple and easy and an English teacher without much sense of web technology can build a teaching assisting web site similar to this one easily. Web industry is developing rapidly, and it is influencing many aspects of our life, language learning included. As an English teacher, we probably do not need to learn the skills of web construction, but we certainly need to pay close attention to how the web can assist or effect us in language learning.

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English Teaching Using CALL Software

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Abstract

A CALL software, New Dynamic English, is introduced to CALL lessons at Kinran Junior College. About one third of the whole lesson period (one lesson 90 minutes) is allotted for the material to learn English. At the end of the course a questionnaire is carried out. It is verified that the software is enjoyable and useful for students to practice.

Introduction

Teaching English using computers changes students' learning styles and lessons completely. It makes learning an individual job, not a whole class activity. Students can learn at their own paces. Teaching English using computers has been getting popular among Japanese schools. Can computers be ideal teaching tools? A questionnaire is carried out to find out how learners accept CALL lessons and the software New Dynamic English.

Method

From April 12th until July 14th New Dynamic English (CALL software) was used as one of the three materials. Students of three classes took the lessons. All of them are first year students of the English Department at Kinran Junior College. They could access New Dynamic English Disc 1 and Disc 2 of Level 2. They answered a questionnaire on New Dynamic English at the end of the course. The number of students who answered it was 77.

Items of Questionnaire and the Answers

The students' answers to each question and their comments are shown one by one.

I-1. Did you enjoy New Dynamic English?

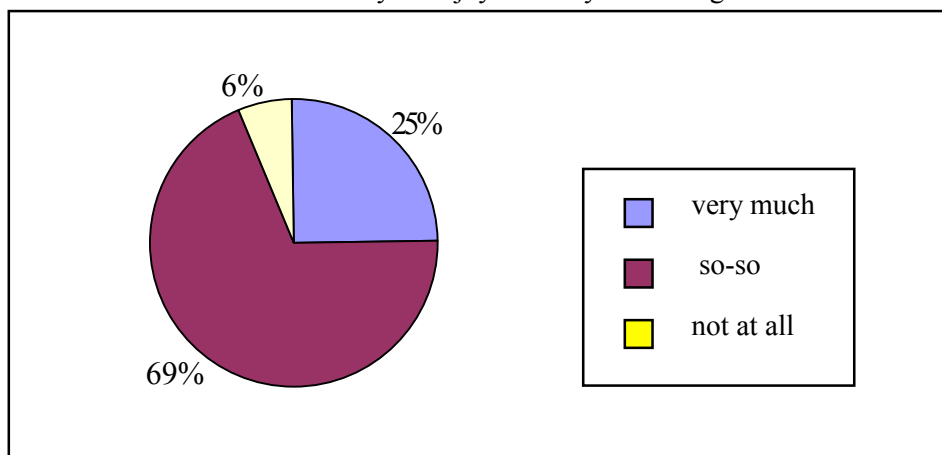


Figure 1. The proportion of students who enjoyed New Dynamic English

Students were asked to choose one item out of “very much,” “so so,” and “not at all” to the question “Did you enjoy New Dynamic English?” Twenty five percent of the students enjoyed the material very much as shown in Figure 1. Sixty nine percent of them enjoyed the material to some extent. We can judge that the material was accepted.

Tables 1, 2 and 3 show the reasons why they enjoyed New Dynamic English very much, the reasons why they enjoyed it to some extent, and the reasons why they did not enjoy it respectively. Some students wrote nothing, and some listed several reasons. The numerals in the right column of each table show the number of students with similar reasons.

As shown in Tables 1 and 2, many students were interested in learning English using a computer and they enjoyed it, because they could learn at their own paces looking at the pictures on the screen which was accompanied with authentic English. Table 3 shows that there are only few students that had some difficulty in learning English through New Dynamic English.

Table 1. Reasons Why New Dynamic English was Enjoyed

I enjoyed New Dynamic English very much, because:	
This was a new experience for me.	3
I could learn at my own pace.	2
It seemed to improve my English.	1
It was easy to understand.	1
Voices and Japanese accompanied it if I needed to hear.	1
I could concentrate on learning.	1
I was happy when they produced the scores.	1
Sounds and moving pictures accompanied it.	1
I liked blank completion putting in the given words.	1
I could improve my listening ability by playing games.	1

Table 2. Reasons Why New Dynamic English was Enjoyed to Some Extent

I enjoyed New Dynamic English to some extent, because:	
It was easy to understand by looking at the screen.	3
I could learn at my own pace. I could listen to the same part repeatedly.	3
The listening part was fun.	2
I could converse with the computer.	1
The way of using the computer for New Dynamic English was easy.	1
I could not understand well.	3
The volume of the sound was small.	2
I wish we could have spent more time for New Dynamic English.	1
The speaking part was not good	1
It was so difficult that I could not proceed well.	1
The patterns of practice were similar.	1

Table 3. The Reasons Why I Did Not Enjoy New Dynamic English

I did not enjoy New Dynamic English at all, because:	
I could not catch English at all.	2
The practice was so simple.	1

New Dynamic English is a material that provides listening, grammar and speaking practices. These practices are combined with each other. Which part they enjoyed most was asked. Figure 2 shows that half of the students enjoyed the listening part of the material most and the number of students who enjoyed the speaking part most was small.

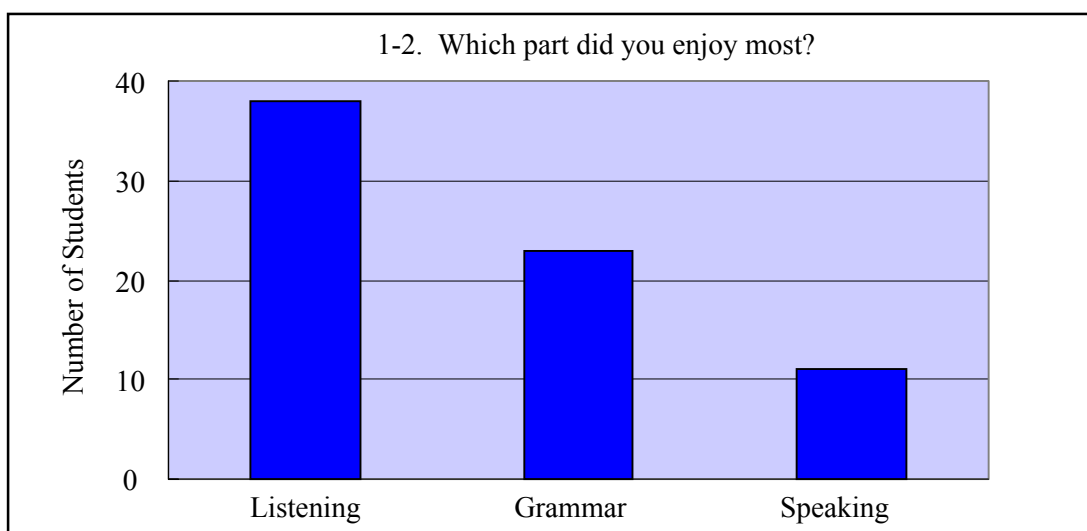


Figure 2. Parts that the students enjoyed most

Tables 4, 5 and 6 show the reasons why they enjoyed the listening part most, the grammar part most and the speaking part most respectively. Some students wrote nothing, and some gave several reasons.

Table 4. Reasons Why Students Enjoyed the Listening Part Most

I enjoyed the listening part most, because:	
I could listen to the English repeatedly if I made a mistake.	5
I got used to listening to the voices.	4
I could listen to natural authentic English.	3
I had to answer within the time limit, so I learned to respond quickly.	2
It was easy to understand.	2

Table 5. Reasons Why They Enjoyed the Grammar Part Most

I enjoyed the grammar part most, because:	
It was good for me that I could try many times until I could produce correct sentences listening repeatedly.	5
I enjoyed the word arrangement.	4
I could understand the English.	3
I enjoyed clicking of mouse.	1
I listened intently to fill in the blanks.	1
I liked the grammar practice.	1

Table 6. Reasons Why They Enjoyed the Speaking Part Most

I enjoyed the speaking part most, because:	
It was a new experience for me.	1
Pronunciation was difficult, but I could repeat speaking until I . could pronouce it correctly.	1
I could judge my own pronunciation.	1

As shown in Table 1, being able to listen to English many times repeatedly with pictures was helpful and necessary for learners. Table 2 shows they enjoyed the exercise of word arrangement using the mouse and listening to English. Table 3 shows some students enjoyed the speaking part of New Dynamic English which has an innovative characteristic with its speaking practice: it recognizes the English that students produce. This practice was fantastic for the advanced students.

Students were asked if New Dynamic English was useful or not. They chose one out of “very much”, “so so” and “not at all”.

Figure 3 shows that twenty seven percent students think that New Dynamic English was very useful, sixty nine percent of them think it was okay, and only four percent of them think it was not useful for them at all.

Tables 7, 8 and 9 show the reasons why students think New Dynamic English was very useful, the reasons why they think it was okay, and the reasons why they do not think it was useful. Some wrote nothing, and some gave several reasons. Each numeral in the right column of each table shows the number of students with similar reasons..

Tables 7 and 8 show that students think New Dynamic English was useful as they could listen to natural English repeatedly and it was fun. Some mentioned that they do not have enough chances to recognize their improvement. Table 9 shows those who do not think it was useful had some difficulty in following the speed of English.

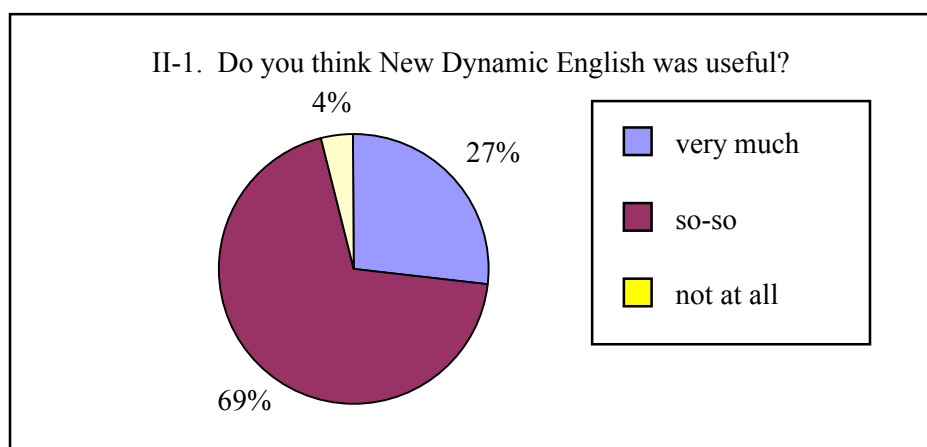


Figure 3. Ratios of usefulness as seen by the students

Table 7. Reasons Why New Dynamic English was Thought to be Useful

I think New Dynamic English was very useful, because:	
Doing it little by little made me get used to English.	4
It was fun.	2
I could listen to the difficult parts repeatedly.	2
It is full of useful expressions.	1
The speakers of the material spoke natural English.	1
I absorbed English pronunciation by listening.	1

Table 8. Reasons Why New Dynamic English was Thought to be Okay

I think New Dynamic English was okay, because:	
This material was useful for listening.	6
At first it looked simple but gradually it became difficult.	1
Repeating similar sentences or patterns I memorized them.	1
I could find if my pronunciation was communicative.	1
This practice would be useful when I go abroad.	1
I do not know if this is useful or not.	1

Table 9. Reasons Why New Dynamic English was Thought to be Useful

I do not think New Dynamic English was useful at all, because:	
I could not follow the speed of English and I could not answer.	2

New Dynamic English is a material that provides listening, grammar and speaking practices. These practices are combined with each other. They were asked which part they thought was the most useful. Figure 4 shows that the number of students who think the listening part was the most useful is the largest at 59 %.

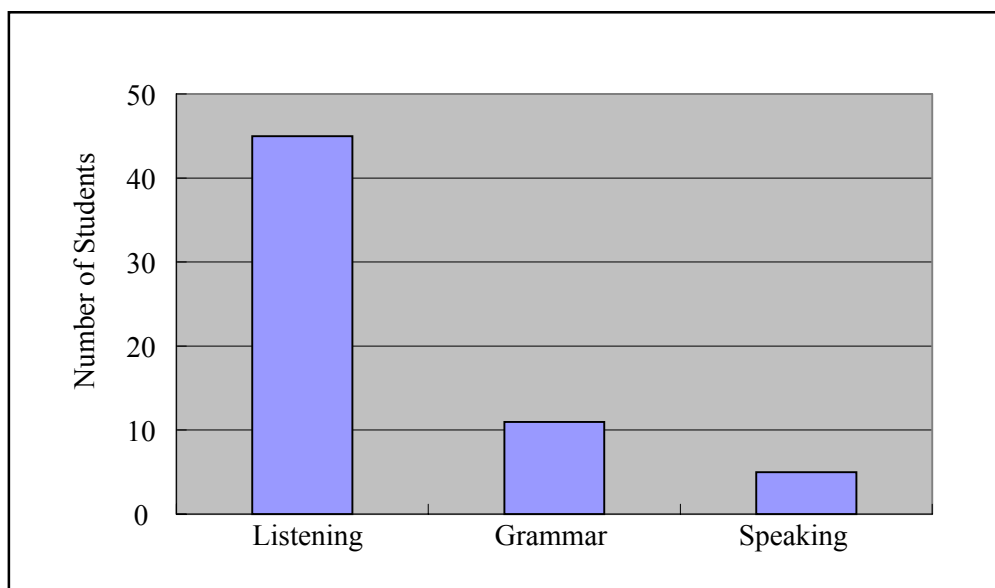


Figure 4. How many students thought each part was interesting.

About 30 to 40 minutes out of each 90 minutes lesson period were allotted for New Dynamic English. Students were asked if they would like to use New Dynamic English for the whole lesson period or not was asked. Figure 5 shows that forty seven percent of students would like to use New Dynamic English for the whole lesson period and forty three percent of them would not

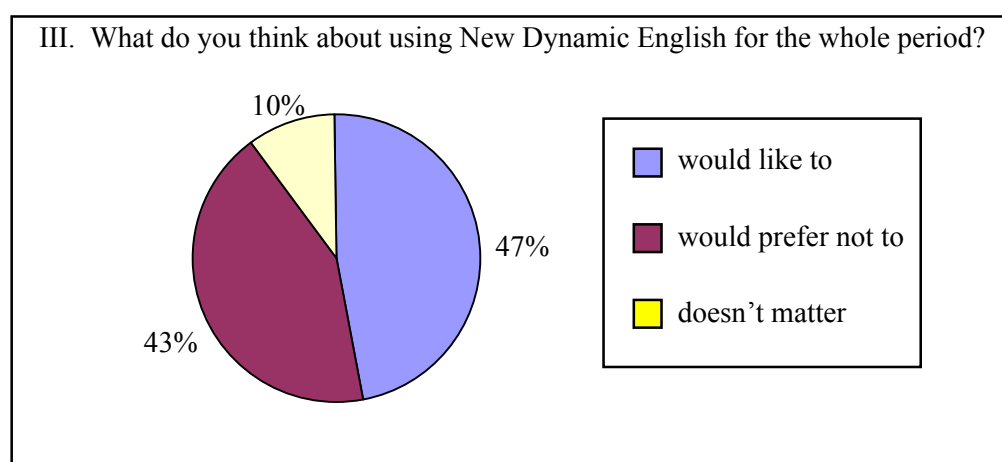


Figure 5. The proportion of students who would like to use New Dynamic English for the whole period

Tables 10 and 11 show the reasons why students would like to use New Dynamic English for the whole period, and the reasons why they would not respectively. Some wrote nothing, and some mentioned several reasons. Each numeral in the right column of each table shows the number of students who made similar remarks.

Table 10. Reasons Why Students Wanted to use New Dynamic English for the Whole Lesson Period

I would like to use New Dynamic English for the whole lesson period, because:	
It is fun and useful.	8
I can learn English at my own pace.	5
This lesson is different from ordinary ones.	2
To use a computer is useful.	1
I like a computer.	1
We cannot do many things for 90 minutes.	1

Table 11. Reasons Why Students Did Not Want to Use New Dynamic English for the Whole Lesson Period

I would not like to use New Dynamic English for the whole lesson period, because:	
It would be boring.	11
It would make my eyes tired.	4
It would be tiring to do it for 90 minutes.	3
I prefer real conversations.	2
It cannot be called lessons.	1
I like the combination of present lessons: computer material, a movie and video skits.	1
Teachers are useless.	1

Results of the Questionnaire

1. One fourth of the students enjoyed New Dynamic English very much.
2. Sixty nine percent of the students enjoyed it to some extent.
3. Half of the students enjoyed the listening part of New Dynamic English most.
4. One third of the students enjoyed the grammar part.
5. About 15 percent of the students enjoyed the speaking part.
6. Twenty seven percent of the students think New Dynamic English was very useful.
7. Sixty nine percent of the students think New Dynamic English was useful to some extent.
8. Fifty nine percent of the students think the listening part was the most useful.
9. Forty seven percent of the students would like to use New Dynamic for the whole period but forty three percent would not.

Discussion

It can be said that most of the students enjoyed this new learning material using computes, and that New Dynamic English was useful for most students, because the quality of English is good and they could listen to it repeatedly. Students wanted to improve their listening ability most, so they appreciated the listening part of it most. Judging from the fact that the percentage of students who would like to use it for the whole lesson period and that of students who would not are similar, it should be decided carefully to use the whole period for the material.

Conclusion

A questionnaire was carried out to find out how learners accepted CALL lessons and the software named New Dynamic English. It was verified that New Dynamic English was enjoyable and useful for students to learn English. The listening part was especially appreciated. But to use it for 90 minutes or more than an hour seems to make students tired and bored. This kind of CALL software is expected to develop more and how to use new one should be studied more.

Evaluating Student Proficiency in the Language Laboratory

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Introduction

The objective of the present experiment is to determine whether the role of vocabulary is more pronounced than background information in the listening process. Various factors are involved in listening, and inadequacies in any pertinent perception skill can pose communication barriers.

The present study tests the relevance of vocabulary versus background information when listening to a news commentary/debate. The type of information provided - vocabulary vs. background information - was correlated with TOEFL-ITP scores.

Results indicate that vocabulary is more essential for word comprehension than background information, but both vocabulary and background information are necessary to understand the meaning of an utterance. That is, a listener can understand word meanings if he/she knows the terminology, but will be unable to comprehend concepts unless background schema is provided. This might be comparable to a person reading a book out loud, but not understanding what he/she is saying.

The higher a subject's proficiency in listening, the more likely either vocabulary or background was to benefit him/her during dictation. Previous research shows that listening is rate dependent - that is the location of phonetic category boundaries changes with rate. (Miller, O'Rourke, & Volatis, 1997). Lower achievers may have not acquired such rate dependent listening skills. Also, Japanese listeners have been found to classify English vowels as similar Japanese correlates (Ingram, J. & Park, S., 1997). Proficient listeners are more likely to have established separate categories for separate vowels, leading to fewer listening errors, whereas less proficient listeners re-assign all foreign sounds into their native phonetic system, thereby increasing the chance of misperceptions. Results indicate that students who are better at listening have already acquired more of the basic skills such as reduction, linking, assimilation, and consonant/vowel perception needed for comprehension, and therefore any extra information provided leads to improvement. Meanwhile, listeners who have not acquired basic skills do not benefit as much from additional vocabulary and background knowledge because their lack of listening skills hinders the phonetic input process.

Likewise, the higher a subject's vocabulary, grammar, and composition proficiency was, the more likely he/she was to initially comprehend the meaning of the target listening segment. However, further information such as additional background was more beneficial to listeners in comprehending meaning, for subjects who have higher TOEFL listening scores. In other words, listening skills were essential in maximizing other pertinent input, such as vocabulary and background information. Unless a subject had the basic listening skills needed, he/she was unable to take full advantage of any other helpful data provided.

Method

The experiment took place over four stages. In the first stage, two groups of Japanese subjects were instructed to write word for word, each segment of the tape-recorded news report shown below:

“Look. Look. The...uh...Milosevic and his security forces had a rampage through Kosovo this summer.

It was inexcusable an appalling. They created 400,000 refugees and homeless.

A lot of people were killed unnecessarily.

I'm sorry that we weren't...uh...much quicker to put pressure on him, but that was a function of a tremendous legal dispute with the Europeans and the Russians over the right of NATO to act.

And now, I hope that this civilian army,

This NATO surveillance and all the other things will provide a security environment which will allow these people to come back."

Only the first sentence was analyzed in order to unify memory retention and fatigue factors. The tape was stopped periodically. If the subjects were unable to hear words, they were encouraged to write any sounds they could pick up. After the tape was played twice, portion by portion, it was played through from beginning to end. After the dictation exercise, they were requested to write if possible, a word-for-word translation of the segment, or if this was not possible, to write a summary of what was being said, or write what the topic was.

In the second stage, group 1 was shown a word list shown below, with the Japanese translation of the words next to the English original.

Word List

Milosevic, security forces, rampage, Kosovo, inexcusable, appalling, refugees, pressure, function, tremendous, legal, dispute, right, to act, civilian army, NATO, surveillance, security, environment

The group repeated the words aloud after an instructor, and was instructed to look at the translation of the words. The word list was read twice off closed-circuit TV screens. The word list was removed immediately after the repetition exercise.

Group 2, on the other hand, was given a short explanation on the situation in Japanese, roughly as indicated below:

The situation in Yugoslavia is reported on daily, in the news and newspapers. The Yugoslav leader, Milosevic, has invaded Kosovo, and is tormenting the Albanians. The North Atlantic Treaty Organization, or NATO, is trying to restrain Milosevic. The person speaking on the tape is an American special envoy, and he is talking about the atrocities committed by Milosevic. Next, he says NATO was not able to act earlier because there were legal problems involved. Finally, he says he hopes NATO monitoring will lead to a good environment, and hopes the refugees can go home soon.

Group 2 was then shown a full Japanese translation of the English on closed-circuit TV screens, but was not provided any English. The translation was read, and was removed from the screen, immediately after the reading.

Both groups then listened to the tapes twice, portion by portion, writing down everything they could hear. They then wrote a translation, if possible, of the text, and were instructed to write a summary, or write the theme, if they could not write a full translation.

In the third stage, the process was reversed, and Group 1 was given an explanation of the background and the Japanese translation, and Group 2 was shown the word list. The groups repeated the listening/dictation and translating/summarizing procedure.

In the fourth stage of the experiment, the subjects listened to segments (individual sounds) which were unrelated to the above debate. The two groups were instructed to choose which word (shown below) they heard when the utterances/sounds were spoken in isolation.

Correct answer: sip, correct, i, bit lack, slip, heard, uncle, full, bough

Options: ship/sip, correct/collect, eat/English (vowel spoken in isolation), beat/bit, sleep/slip, heard/hard, ankle/uncle, fool/full, bough/boy

Correct answer: see, wrong, i, ill, bag, live, fur, run, pull, mare

Options: she/see, long/wrong, meat/busy (vowel spoken in isolation), eel/ill, bag/bug, leave/live, fur/far, ran/run, pool/pull, mere/mare/moor/more

The results were correlated with TOEFL scores.

Results and Discussion

Results indicate that vocabulary is essential for word comprehension. A listener is not able to hear a word he/she does not know. On the other hand, both vocabulary and background information are necessary to comprehend the meaning of a statement.

The higher a subject's vocabulary, grammar, and composition proficiency was, the more likely he/she was to initially comprehend the meaning of the target listening segment. Moreover, additional information such as background data was more beneficial to listeners who have higher TOEFL listening scores.

The ability to hear individual sounds (segments) correlated mildly with the TOEFL vocabulary/grammar scores (0.4 & 0.35) for the two groups, but was not correlated with the listening or reading sections. This may be because listening to individual sounds is a local skill, similar to vocabulary/grammar, rather than a global skill like understanding concepts and ideas.

Conclusion

The present experiment was conducted to determine whether vocabulary is more essential than background information in listening. Vocabulary vs. background information - was correlated with TOEFL-ITP scores.

Results indicate that vocabulary is more essential for word comprehension than background information, but both vocabulary and background information are necessary to understand meaning. Listeners are able to identify words if they know the terminology being used, but are unable to comprehend the meaning unless the background is provided.

The higher a subject's proficiency in listening, the more likely either vocabulary or background would benefit him/her in the dictation exercise. Students who are better at listening have already acquired more of the basic skills such as reduction, linking, assimilation, and consonant/vowel perception needed for comprehension, and therefore any extra information leads to immediate improvement. On the other hand, listeners who have not acquired basic skills do not benefit as much from additional vocabulary and background knowledge because their lack of listening skills hinders the phonetic input process.

Likewise, subjects who scored higher on TOEFL-ITP vocabulary, grammar, and composition were more likely to initially comprehend the meaning, but further information such as additional background was more helpful for listeners in comprehending meaning, if they had higher TOEFL listening scores. In other words, listening skills were essential in utilizing vocabulary and background information. Unless subjects had basic listening skills, they were unable to fully benefit from other pertinent data.

Moreover, students who scored higher in TOEFL vocabulary/grammar were also more likely to hear individual sounds - probably reflecting the more localized and isolated nature of both skill compared to more global tasks such as overall listening comprehension and reading for meaning.

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An Evaluation Study of CALL Software for EFL Learners

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Abstract

The purpose of the present study is to evaluate some CALL software designed for EFL learners of intermediate level. The major research questions explored in the study are: (a) What are the advantages and disadvantages of the evaluated CALL software? (b) What are the users' perceptions for the evaluated CALL software? Subjects in the study are eight students and six teachers from a university in Taiwan. There are three instruments adopted in the study, including a survey, a questionnaire, and an interview. Several suggestions are proposed based on the results. First, user-friendliness and good display quality are the important elements of effective CALL software. Besides, the vocabulary and content of CALL software must be diversified and varied in order to arouse users' interests and provide lots of information and vocabulary for learners. In addition, effective CALL software should provide authentic conversation and motion pictures for users to obtain situational learning.

Introduction

In the past, people listened to the tapes or the radio to learn English; nowadays, CALL has been generally used in teaching and learning English. Nevertheless, most of the software designers emphasize the attractiveness of the multimedia software, rather than the analysis of purposes, needs, and levels of users. As a result, there is a lot of multimedia software which looks very interesting and useful, but in fact the context of most software can not satisfy many learners. Some of them are even totally unfavorable in learning English. Due to the difficulties of establishing a standard, we decide to evaluate the multimedia software for English learners of intermediate level. The purpose of the present study is to evaluate several CALL software programs designed for EFL learners of intermediate level English. Three main research questions are explored: (1) What are the features in the evaluated CALL software? (2) What are the advantages and disadvantages of the evaluated CALL software? (3) What are the users' comments for the CALL software?

Literature Review

There are two studies about the effectiveness of CALL for ESL learning. According to Watts' study (1989) on CALL, IVD (interactive videodisc) provided a highly motivating and successful language learning experience, based on her research results and learner response. Branvold, Chang, Probst and Bennion (1986), in a pre-post-test design of comparison between IVD groups and non-IVD groups, found that both groups had increased learning in areas of vocabulary, expressions, and content. Considering the examination of a single lesson will rarely reveal that it is good for every purpose or every student, Chappelle and Jamieson (1989) emphasize that aspects of lessons, learning, and learners should be clearly defined to make a meaningful assessment of CALL effectiveness. Malone, Kirkpatrick and Heasley (1984) proposed a series of considerations and selected appropriate and relevant points: the objective of evaluation, test method, and appropriate test measure selected. As for test method, some are suggested as follows: task analysis, error analysis, experiment, observation and measurement of actual performance, survey, questionnaire, and interview. Appropriate test measure selected should include user-friendliness, information quality,

display quality, display characteristics, data organization, dialogues, procedures, data entry device characteristics and documentation.

Two studies about the use of help function are reviewed. Chou (1992) asked 39 EFL high school students to work on a reading program through using a hypertext program for reading instruction. The program is designed with four types of help respectively: text only (no help), text with on-line vocabulary help, text with on-line sentence structural analysis, and text with strategic help. This comparison study reports that types of help did not make a difference on reading comprehension among groups of subjects. Chou's questionnaire data indicate that subjects thought the vocabulary help was the most useful, and was used most frequently. In a study about students' reaction toward standard subtitles, Vanderplank (1988) found that the subtitles can reduce anxiety in class and release spare language processing capacity. However, he found that subtitles are not so useful for low-level learners as for intermediate learners.

In Taiwan, two studies for EFL learning are reviewed here. In the fall of 1993, twenty college EFL subjects from Foreign Languages Department of National Tsing Hua University participated in the evaluation of a piece of IVD courseware (Liou, 1993). It was conducted from the perspective of learner strategies regarding use of on-line help and time on task. Results show that the on-line help design is useful to most of the learners because they actually used them. Then we move to an evaluation survey study on the effectiveness of a multimedia CALL program conducted from 1994 to mid 1995 (Liou, Shieh, and Yeh, 1994). This paper shows the results of evaluating a piece of interactive videodisc language learning courseware using a survey approach. This survey was conducted to 31 EFL students using a questionnaire in order to evaluate a piece of interactive videodisc multimedia courseware. The implication from this study is that we have to delineate important constructs beforehand, and then we can design a feasible and convenient questionnaire like those in the reviewed studies. However, the questionnaire answers can have biases or even the designer's subjective presuppositions. The overall assessment is positive on four aspects: learning effectiveness, interestingness, user-friendliness, and instructional design effectiveness. Some unsatisfactory specific points of the courseware would need revision work in the future.

Methodology

Subjects

Subjects for this study are 8 Chinese students from The Applied Foreign Language Department (DAFL) at National Yunlin University of Science and Technology. Generally, their abilities in listening, reading, speaking, and writing are among intermediate high level and have no difficulty communicating in English in daily life. The average age of subjects is 22 and the average duration of learning English till now is 10 years. Two males and six females participated in the present study.

Materials

LangMaster Interactive English. *LangMaster Interactive English* is a well-designed multimedia software especially for learning foreign languages. The course programs are based on textbooks published by Heinemann English Institution in the UK. One of the most creative features of the advance program is the detective story; fictions are adopted in the materials. *LangMaster Interactive English* programmed three different level programs for those who have different needs. Each learner can select the most proper level for learning.

Studio Classroom. This software contains five units in it. *The American Way* is designed in order to let learners understand American culture, values, and life style. *Multi-Word Verbs* contains some interesting fables which include a lot of phrases, and its purpose is to make users learn more phrases easily through reading these fables. *Famous People* introduces stories of famous people such as Leonardo da Vinci and Bill Gates. *Around the World* introduces the world news, and some of them even use the newscast way. *Spotlight* vividly introduces several famous cities for users.

Huh? *Huh?* Is a program designed to help learners to enhance their listening ability, and is published by Attainment Company in Taiwan. There are four major parts for practice: *games*, *easier*, *difficult*, and *impossible*. In “Games” section, four simple games are included. In the “What’s the sentence” section, a learner must put the words in sequence after listening to one sentence. In the “What does it mean” section, a learner must choose the exact meaning after listening to one sentence. In the “Rabbit hunting” section, a learner has to shoot the answer after listening to a word. Also, in the “How many words” section, a learner has to select the number of words after listening to one sentence.

Instruments

There are three kinds of experimental instruments adopted in the study, including a survey, a questionnaire and interview questions for CALL software. They are described in the following sections.

Survey

The survey is used to examine researchers’ attitudes toward the three CALL software programs. The survey for researchers includes four parts. Part I. is *Publication Information*, which asked researchers to write down the basic information about the software, i.e. title, author, publisher, place of publication, Internet URL, and intended level. Part II. is *System Minimum Requirements*, which asked researchers to write down the information about the basic computer system requirement in order to assess the software, such as CPU, CD-ROM, RAM, SoundBlaster, video card, etc. Part III. is *Software Characteristics*, which asked researchers to check or circle the appropriate answer.

Questionnaire. The questionnaire was designed to examine subjects’ attitudes and feelings toward software. Part. I. is *Basic Information*, including some questions about the basic information of each subject such as the name, the age, etc. Part. II. is *Instruction Before Using*. In this part, subjects should circle the most appropriate answer for the questions such as that if the instruction is clear enough or if the intended level is clearly noted in the instruction. Part. III. is *Evaluation After Using*, including the following four sections: hypertext, games and tests, visual and sound effect, and user satisfaction.

Interview. The interviewing questions are designed to ask more deeply about subjects’ opinions and feelings toward software. Therefore, the answer would be open, in order to get more detailed information from the subjects. Six questions are designed for each evaluated program.

Procedures. At the first stage, researchers decided to select three sets of software of intermediate level for evaluation. Secondly, survey for CALL software was used for conducting evaluation by researchers themselves. Researchers tried out these three sets of software step by step, including screen display, using the program, and content. Taking notes about special feature, advantage, as well as disadvantage in every step was necessary. After that, researchers filled out the survey.

At the final stage, eight students as subjects from Department of Applied Foreign Language in National Yunlin University of Science and Technology were assigned to use and evaluate one set of software in the multimedia classroom. After that, subjects completed questionnaire for CALL Software and interview questions.

Results

Researchers’ Ratings of Survey

In the present study, the survey is used to examine researchers’ attitudes toward three sets of CALL software. Thus, the results of the survey represent the value of the software in researchers’ opinion. There are four parts in the survey, including: Publication Information, System Minimum Requirements, Software Characteristics and

Content. The following section demonstrates one of the results of researchers' ratings of one CALL software evaluated in the current study.

Survey of *Studio Classroom*

Using the Program

- | | |
|---|---|
| 1. Menu Driven <input checked="" type="checkbox"/> | Command Driven <input type="checkbox"/> |
| 2. Display of Menus/Commands | Clear 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Unclear |
| 3. Use of Helps | Clear 5 4 3 2 <input type="checkbox"/> 1 Unclear |
| 4. Existing Program | Easy <input type="checkbox"/> 5 <input type="checkbox"/> 4 3 2 1 Difficult |
| 5. Directions | Clear 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 2 1 Unclear |
| 6. Feedback | Efficient 5 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 1 Inefficient |
| Visual <input checked="" type="checkbox"/> | Auditory <input checked="" type="checkbox"/> Immediate <input type="checkbox"/> |
| Motivational <input type="checkbox"/> | Positive <input type="checkbox"/> Negative <input type="checkbox"/> |
| 7. Types of Activities <input type="checkbox"/> | |
| Drill and Practice <input checked="" type="checkbox"/> | Tutorial <input type="checkbox"/> Simulation <input type="checkbox"/> |
| Games <input checked="" type="checkbox"/> | Demonstration <input type="checkbox"/> Test <input checked="" type="checkbox"/> |
| Reading <input checked="" type="checkbox"/> | Composing <input type="checkbox"/> |
| 8. Record Keeping | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| a. Current (on screen only) <input type="checkbox"/> | |
| b. Stored (for later printing) <input type="checkbox"/> | |
| c. Comparative (individual with other users) <input type="checkbox"/> | |
| 9. Interface | User Friendly 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 2 1 User Hostile |
| 10. Motivation | Interesting 5 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 1 Boring |

Subjects' responses to questionnaire. In the present study, the questionnaire was designed to examine subjects' attitudes and feelings toward each software. Therefore, the result of the questionnaire would represent subjects' opinions about how each software performs.

Table 1 presents one part of the questionnaire.

Subjects' answers to interview questions. In this study, the interviewing questions are designed to asked more deeply about subjects' opinions and feelings about each software. The following section shows part of the results of subjects' answers to interview question. (The number of respondents for each answer is indicated in brackets.)

Interview of Huh?

Question 5: What kind of characteristics do you think a useful multimedia software for EFL learners should have?

- Answers:**
- [3] User-friendly, such as simple and clear explanations and easy to operate.
 - [4] Vivid and creative in order to make the user to continue using.

3. [5]. Attractive music, sound effect, especially outstanding pictures to attract people to use.
4. [2] Interesting and creative games or exams, in order to attract the users and correct their mistakes.
5. [1] Understanding the needs of users.

Questionnaire of LANGMaster Interactive English

Table 1. Subjects' Responses to Evaluation after Using (satisfaction with the software)

Item	Number	Mean	Rank
I am content with the program settings.	5	2.2	7
I learned something from this multimedia software.	5	2.8	3
Generally, the multimedia software is very efficient for teaching English.	5	2.4	4
The software helped me most in the following skills:			
Listening	5	3.6	2
Pronunciation	5	3.8	1
Conversation	5	2.6	3
Reading	5	2.6	3
Writing	5	1.6	6
Grammar	5	2.2	5
Vocabulary	5	3.6	2
Cultural Understanding	5	2.6	3
Others	5	1.0	8

Discussion and Conclusion

Discussion of the Results

LANGMaster Interactive English. Reviewing the data from survey, questionnaire, and interview questions, we propose three advantages of *LangMaster Interactive English*. First, there is variety in the vocabulary and phrases. Second, meaningful pictures are very helpful to comprehend the text. Third, subjects agree that the software accelerates listening skill the most for the pronunciation is articulate.

According to the data, there are few disadvantages of the software. First of all, researchers and most subjects reported that the main menu is poorly designed. Besides, the software does not give proper directions. Second, rules in drills and games are not defined. Third, the helplessness of the “help function” is another weakness of the program. At worst, users have to quit from the current section and start the software all over again. To sum up, the data suggest a major defect in the software. Comparing the result of the present study with those of the previous studies in Chapter 2, we discover that user friendly is one of the significant factors for users.

Studio Classroom. According to the questionnaires of Studio Classroom, we can see that this software has the best performance for the users. Most of the items are evaluated to be above 4.0. So, from these statistics we can

know this software is the most useful one for the learners. The highest point is 4.4; thus, we can see that the vocabulary for the Studio Classroom are most useful and abundant. The second highest point is 4.2. From these items, they show that the contents are well structured, and it is helpful to learn English by playing games for users. Moreover, the effect of motion pictures as well as sound effects and background music are useful to attract the attention of users. Most of the subjects think that this software is user-friendly. It is really easy to operate.

However, from the lowest point of 2.6, we can know that the one of the disadvantages of this software is that it does not clearly note the level on the cover or in the instruction. The other disadvantage of this software is that the instruction before using is not clear and complete enough for users to understand.

Huh? After being evaluated by subjects and researchers, this program is found to have the following advantages. First of all, the documentation is clear and easy to understand. Secondly, the screen display is organized and uncluttered, and the font is clear and moderate, which make learners feel comfortable. Thirdly, the interface is quite user-friendly and learners will be willing to use it. Fourthly, the games are very interesting and the pictures are cute and attractive. Finally, *Huh?* is a representative listening program with unbiased and coherent content. Its step-by-step practices, from Easy to Impossible, makes it easy for learners follow and gain points.

However, there are also several disadvantages in this program. Firstly, it lacks the use of help. According to the evaluation of a piece of IVD courseware (Liou, 1993), results show that the on-line help design is useful to most of the learners because they actually used it. Besides, Robinson (1989) revealed that a program, which concludes program and student-controlled help benefits more for students than those with no help, total program-controlled or total student-controlled programs. Without the use of help, learners will easily get confused when they have troubles in operation. Secondly, it lacks feedback, and it does not analyze learners' learning defects. Meskill (1991) implemented six different types of strategy advice messages (rehears, monitor, repeat, plan, associate, and resource strategies). The results indicated that most of the subjects read those messages and were willing to follow the advice. Without feedback, learners can hardly recognize how to adjust themselves and how to improve themselves. After all, this program neither provides the time limit when playing games, and nor keeps learners' records.

Implications of the Study

By combining the results of the present study, there are some implications for teachers, parents, students, and software firms. First, for teachers or parents, we discover that students are generally interested in multimedia software programs. Besides, software programs apply visual aids, motion pictures and sound effects, which draw more attention than traditional teaching methods. A properly projected multimedia software program can be a very good tutor after class. So, parents should encourage children to use it to assist learning and reviewing at home.

Secondly, for students, it is always significant for students to select a better multimedia software program. Students or users should examine if the software is labeled with a defined level. To choose the suitable level for users is important. To consider about how practical the contents are should be emphasized, too. Besides, the settings of the program must create a scene for students to learn how to respond according to the actual situation.

Thirdly, by reviewing the results of surveys, questionnaires, and interview questions, we propose three implications for software firms. First of all, software companies should be able to combine the latest high technology with software design. Motion pictures and sound effects will draw the most interest from users.

Consequently, to combine software designers' specialty with the knowledge of EFL teaching experts is another urgent issue for software companies. Software companies need to work on how to integrate the essence of the two specialists (EFL experts, software designers) and to make the best of the multimedia software programs.

Finally, while reviewing the results, we also detect that it is necessary to include the function of "recording saving" into the program. With this function, teachers, parents and students are capable of observing how improvement is made during the self-learning process. Eventually, software firms could pay more attention on how to make "records saving" function work in the future design.

Conclusion

From the discussion of the results, we can propose several useful suggestions for CALL software designers as well as EFL learners. First of all, the software must be user-friendly and have good display quality. If the program is hard to operate, and the display of the program is carelessly designed and roughly explained, users will have no patience to use it because of inconvenience and confusion. Therefore, we conclude that user-friendliness and good display quality are parts of the important elements of an ideal Call software. Besides, it is important to provide users clear instructions before using the software, and the online help design can be useful to solve problems of operation for users. Finally, an effective CALL software should provide authentic conversation and motion pictures to users to obtain situated learning. For this suggestion, we proposed the combination of the latest high technology with software design. Motion pictures and sound effects take a lot of space in the disk, and the space of a piece of CD-ROM is insufficient. Thus, combining the latest high technology in the future with software development is the only way to overcome this limitation.

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An Exploration of the Relationships Among Test Taker Characteristics, Test-Taking Strategies, and Test Performance

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Abstract

The paper, taking 523 two-year college freshmen throughout Taiwan as subjects, aims to explore the relationships among test taker characteristics, test-taking strategies, and test performance. Nevo's (1989) checklist of test-taking strategies is adopted as an instrument for the study. Yien's (1999) findings concerning the relationships between testees' characteristics and test performance also serve as references. The results of this study indicate that there are significant relationships among test taker characteristics, test-taking strategies and test-taking strategies. The findings suggest that students of low English proficiency should be trained to apply the effective test-taking strategies to improve their testing scores and therefore build up their learning confidence and accelerate their learning in English.

Introduction

Education in Taiwan is examination-oriented. Generally speaking, the goal of education for most students is to pass every kind of examination. In the examination oriented setting of Taiwan, test results are the focus for education, and therefore some important things such as test taker characteristic and test-taking strategies are overlooked. Allan (1992) and Amer (1993) indicated that there was a significant relationship between test performance and skill in test-taking. Allan (1992) also pointed out that test-taking strategies are seldom explored, though their implications for test construct validity are important. Bachman (1991) claimed that by far the majority had examined only the product of language test-taking scores.

The present paper adopts Nevo's (1989) checklist of test-taking strategies as well as Yien's (1999) findings concerning the relationships between test taker characteristics and test performance as a basis for the study. And then the author extends the research to the different application of test-taking strategies on gender, major field of study, location, educational system, and school type (Yien, 1999) as well as the relationships among test taker characteristics, test-taking strategies, and test performance. The study attempts to find the effective test-taking strategies for students to improve their test performance, provide an insight for English instructors to recheck their instructional materials, and then help students to build their confidence in learning English, and finally make them become self-starters in learning English.

Literature Reviews

Nevo (1989) proposed 16 test-taking strategies; some of them were assumed to be contributory (background knowledge, returning to the passage, chronological order, clues in the text, ceasing search at plausible choice, process of elimination, key word, association) and some non-contributory (guessing, choosing the exception, length, location, common word, matching the stem with an alternative, matching the alternative with the text).

The author (Yien, 1999) investigated the influence of test taker characteristics on English test performance and results of her study suggested that performance on EFL tests was closely related to test taker characteristics such as gender, major field of study, region, educational system, and school type.

Based on the findings of the author's (Yien, 1999), the study extends the exploration to the relationships among test taker characteristic, test-taking strategies and test performance. The section will focus on the relationships between test taker characteristic and test-taking strategies as well as test-taking strategies and test performance.

Test Taker Characteristics and Test-taking Strategies

Allan (1992) and Messick (1989) claimed that students were differentially skilled in taking tests. Allan (1992) and Storey (1995) further claimed that when taking EFL/ESL tests, respondents employing prior knowledge were differentially skilled in taking tests. Earlier, Duran (1989) indicated that differences in cultural background affected the ways in which individuals perceived problem-solving situations.

In addition, Allan (1992) shared the same viewpoint with Nevo (1989) that test takers employed a combination of varied test-taking strategies. More specifically, Cohen (1986), Chuang (1999) and Wu (1998) drew a similar conclusion concerning the association between the difference of using test-taking strategies and testees with varied English proficiency.

Test-taking Strategies and Test Performance

Anderson et al. (1991) suggested that the test performance was influenced by strategies the test takers employed, the characteristics of tasks, and the characteristics of test takers. Both Allan (1992) and Amer (1993) indicated that there was a significant relationship between test performance and skill in test-taking.

Some other researchers specified the impact of test-taking strategies on test performance. Nevo (1989) indicated that most of the correct responses were obtained by the use of contributory strategies. Purpura (1998) also found that differences existed in the ways that high- and low-ability test takers used strategies.

Recently, some researchers recommended the instruction or explicit training for ESL respondents in test-taking strategies. For instance, Allan (1992) developed a test of test-wiseness that included stem option cues, grammatical cues, similar option cues, and item giveaway. Amer (1993) suggested that students who did poorly on EFL tests could be trained to use some test-taking skills to improve their scores.

Method

Research Structure

Based on the aim of the study and the exploration of related literature, the research structure for the study can be illustrated as in Figure 1. The figure indicates that test taker characteristics influence the application of test-taking strategies and then test-taking strategies influence test performance.

Subjects

1100 questionnaires were sent out by post. 523 (47.5%) participants, who completed the questionnaire, were chosen as the subjects of the study. The test score of the study was the English score of the Joint Technical College Entrance Examination (JTCEE) in 1997. The number of students and the mean English score of JTCEE in 1997 for each variable was presented on Table 1.

Variable Measurement

The study examined the relationships between test taker characteristics and test-taking strategies as well as between test-taking strategies and test performance. The five test taker characteristics were: (a) gender, (b) aca-

demographic major, (c) location, (d) educational system, and (e) education background. The test performance was the English test score of JTCEE in 1997. The checklist of test-taking strategies was that of Nevo (1989).

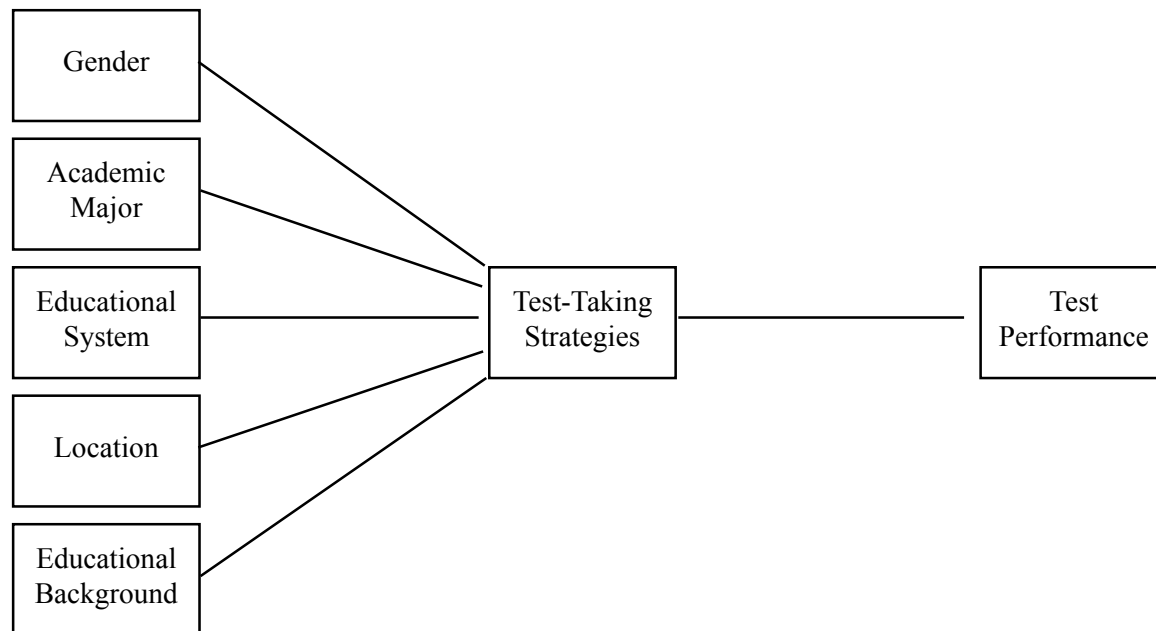


Figure 1. The research structure of the study

Table 1. The Students' Number and Mean Score of the Joint Entrance Exam on English Test for Each Variable

Variable		Number	Mean score of Entrance exam
Gender	(1) Male	379	49.4
	(2) Female	144	61.0
Academic Major	(1) Mechanical Engineering	255	41.1
	(2) Electrical & Electronic Eng.	51	53.8
	(3) Industrial E & M	135	66.8
	(4) Nursing	53	61.2
	(5) Chemical	29	69.1
Educational System	(1) Vocational High school	489	50.9
	(2) High school	34	77.1
Location	Urban (1) Taipei & Kaohsiung	108	58.2
	(2) Provincial cities	100	61.9
	Rural (3) Other places	315	47.7
School Status	(1) Private	286	45.9
	(2) Public	237	60.8

Questionnaire Design

The questionnaire consisted of personal information (including gender, academic major, educational system, location, and education background) and testing strategies (designed based on Nevo's (1989) Multiple-Choice Strategy Checklist). A 5-point Likert-type scale was adapted to investigate the extent of agreement of respondents' opinion toward the questions.

Analytic Method

The study applied Principal Component Factor Analysis to identify the principal factor dimensions among the test-taking strategies. Besides, the questionnaire results were analyzed by t-test, and one-way ANOVA with SPSS statistic program. The post-hoc Scheffe test was also adopted to investigate the relationships concerning test-taking strategies within each variable. Regression Analysis was performed to examine the relationships between test-taking strategies and test performance.

Results and Discussion

The Factor Analysis of Measurement and Reliability

Principal Component Factor Analysis was conducted to extract the principal factor dimensions from the 16 test-taking strategies. Hair, Anderson, Tatham and Black (1995) suggested the criteria for the significance of factor loadings as follows:

1. The Eigenvalue is greater than 1.0.
2. After the operation of Varimax rotation, the absolute value for a factor loading is greater than 0.5.
3. The loading of .30 translates to approximately 10 percent explanation, and a .50 loading denotes that 25 percent of the variance is accounted for by the factor.

Using the first Varimax rotation, four of the 16 test-taking strategies in this study were discarded because the factor loadings were below 0.5. After the second Varimax rotation was conducted, we identified four common factors (listed in Table 2) which together explained 61.3% of the variability among the remaining 12 strategies. The four common factors were named as follows: Inference, Time, Guessing, and Order.

Factor 1: 'Inference' represents items in which the answers of a test are given by making inference.

Factor 2: 'Time' represents time allocation during the test.

Factor 3: 'Guessing' represents items in which the answers of a test are given based on guessing.

Factor 4: 'Order' represents the order in which the passage and items is processed.

The Cronbach's α in the study was close to 0.6 or over, hence, they were acceptable to explain the reliability of the measurement (Cuieford, 1975).

Relationships Between Test Taker Characteristics and Test-taking Strategies

This portion investigated the relationships between test taker characteristics and test-taking strategies by using one-way ANOVA, t-tests, and the post-hoc Scheffe test.

Inference. Table 3 showed that significant difference on the application of 'Inference' by 'academic majors' ($p = 0.066$), 'educational system' ($p = 0.050$), 'location' ($p = 0.001$) and 'education background' ($p = 0.003$) was found.

A further observation found that students graduated from high school applied significantly more of 'Inference' than their counterparts. Students from the most urbanized areas applied significantly more of 'Inference' than those from rural areas. Public school students applied significantly more of 'Inference' than their counterparts. However, Scheffe did not show a significant difference on the application by every two of the five academic majors.

The result seems to imply that students with more language training possess more sophisticated test-taking strategies when taking language tests and that respondents with higher English proficiency apply 'Inference' more. The results also seem to suggest that 'Inference' is more frequently applied by testees who are from a learning environment of high competition, stricter training and intensive practice (Yien, 1999).

Table 2 The Results of Factor Analysis

Factor	Content	Factor loading	Eigen-Value	Cum Pct	Cronbach's α
Factor 1: Inference	No. 3. Selects an alternative through deductive reasoning	0.833	3.02	25.2	0.7150
	No. 2. Selects an answer not because it was thought to be correct, but because the other did not seem reasonable, seemed similar, or were not understandable	0.780			
	No. 4. Matches the stem and/or alternatives to a previous portion of the text	0.714			
Factor 2: Time	No.13. Expresses uncertainty at correctness of an answer chosen	0.740	1.77	40.0	0.6687
	No.14. Skips a quotients and returns to it later	0.738			
	No. 7. Makes reference about time allocation	0.708			
Factor 3: Guessing	No. 12. Stops reading the options when they reach the answer	0.695	1.36	51.3	0.5942
	No.1. Guesses without any particular considerations	0.689			
	No. 15. Skips a questions that is not understood and leaves the response blank	0.644			
	No. 16. Marks answers without reading in order to fill the space	0.619			
Factor 4: Order	No. 8. Reads the questions and options after reading the passage	-0.840	1.19	61.3	0.6049
	No.9. Reads the questions and options before reading the passage	0.832			

Table 3. The Different Application of ‘Inference’ on Test-Taker Characteristics

Variable		Mean	t value or F value	Significance	Scheffe
Gender	(1) Male	4.0018	.588	.443	
	(2) Female	4.0440			
Academic major	(1) Mechanical Eng.	3.9542	2.218	.066	n.s.
	(2) Electrical & Electronic Eng.	4.0327			
	(3) Industrial E & M.	4.1185			
	(4) Nursing	3.9623			
	(5) Chemical	4.1034			
Educational system	(1) Vocational High	4.0007	3.863	0.050	(2) > (1)
	(2) High School	4.1961			
Location	Urban (1) Taipei & Kaohsiung	4.1821	7.559	0.001	(1) > (3)
	(2) Provincial cities	4.0467			
	Rural (3) Other places	3.9450			
Education background	(1) Private	3.9487	8.697	0.003	(2) > (1)
	(2) Public	4.0936			

n.s. = not significant

Time. Table 4 showed that there was a significant difference on the application of ‘Time’ by ‘gender’ ($p = 0.001$), ‘academic majors’ ($p = 0.002$), ‘educational system’ ($p = 0.014$) and ‘education background’ ($p = 0.011$).

Females seem to be specially good at the management of time during tests because they may be more cautious and careful. Students graduated from high school applied significantly more of ‘Time’ than their counterparts, and students of public colleges worked better at time allocation than their counterparts. The results may suggest that respondents with more language training and better language proficiency have higher ability to manage time during the test.

The Scheffe also showed that Industrial E & M majors managed time significantly better than Mechanical Engineering majors did. One interpretation may be that majority of Mechanical majors is male and that of Industrial E & M is female.

Guessing. Table 5 showed that there was a significant difference on the application of ‘Guessing’ by ‘academic major’ ($p = 0.005$), ‘educational system’ ($p = 0.003$) and ‘education background’ ($p = 0.035$). Chemical majors applied ‘Guessing’ significantly more than Mechanical Engineering majors. The results also showed that high school graduates and public college students applied “Guessing” more than their counterparts, respectively. The results may suggest that students with better English achievement apply ‘Guessing’ more than their counterparts. A possible explanation may be that these people usually have strong intention to get high scores; therefore, when they confront questions which they have no ideas of correct answers, they take the chance to guess.

Order. Table 6 showed that significant differences on the application of ‘Order’ was only found among major fields of study ($p = 0.047$). The results showed that majors of Chemical and Nursing applied more of ‘Inference’ than their counterparts.

Compared with the application of ‘Inference’, ‘Time’, and ‘Guessing’, less people applied ‘Order’. Maybe testees are lack of this kind of training. Meanwhile, it is hard to identify the effectiveness of application of ‘Order’ by the results.

Table 4. The Different Application of ‘Time’ on Test-Taker Characteristics

Variable		Mean	t value or F value	Significance	Scheffe
Gender	(1) Male (2) Female	3.7863 3.9977	10.502	0.001	(2) > (1)
Academic major	(1) Mechanical Eng. (2) Electrical & Electronic Eng. (3) Industrial E & M (4) Nursing (5) Chemical	3.7464 3.7190 3.9901 3.9748 4.0115	4.443	0.002	(3) > (1)
Educational system	(1) Vocational High (2) High School	3.8255 4.1176	6.059	0.014	(2) > (1)
Location	Urban (1) Taipei & Kaohsiung (2) Provincial cities Rural (3) Others	3.9012 3.9133 3.8032	1.506	0.223	
Education background	(1) Private (2) Public	3.7797 3.9291	6.433	0.011	(2) > (1)

Table 5. The Different Application of ‘Guessing’ on Variables

Variable		Mean	t value or F value	Significance	Scheffe
Gender	(1) Male (2) Female	3.6748 3.6788	0.005	0.945	
Academic major	(1) Mechanical Eng. (2) Electrical & Electronic Eng. (3) Industrial A & M. (4) Nursing (5) Chemical	3.6078 3.7010 3.7648 3.5943 3.9655	3.714	0.005	(5) > (1)
Educational system	(1) Vocational High (2) High School	3.6559 3.9632	8.753	0.003	(2) > (1)
Location	Urban (1) Taipei & Kaohsiung (2) Provincial cities Rural (3) Others	3.7014 3.7125 3.6556	.480	.619	
Education background	(1) Private (2) Public	3.6259 3.7351	4.456	0.035	(2) > (1)

Table 6. The Different Application of ‘Order’ on Variables

Variable		Mean	t value or F value	Significance	Scheffe
Gender	(1) Male (2) Female	3.3852 3.4479	1.249	.264	
Academic major	(1) Mechanical Eng. (2) Electrical & Electronic Eng. (3) Industrial A & M (4) Nursing (5) Chemical	3.3843 3.3922 3.3370 3.5472 3.6207	2.429	0.047	n.s.
Educational system	(1) Vocational High (2) High School	3.4008 3.4265	.064	0.801	
Location	Urban (1) Taipei & Kaohsiung (2) Provincial cities Rural (3) Others	3.4583 3.3850 3.3889	.647	0.524	
Education background	(1) Private (2) Public	3.4178 3.3830	.476	.491	

n.s. = not significant

Relationships Between Test-taking Strategies and Test Performance

The relationship between test-taking strategies and test performance was examined by Regression Analysis, and the results were demonstrated in Table 7. Results indicated there were significant relationships between test performance and test-taking strategies ‘Inference’ ($p=0.002$), ‘Guessing’ ($p=0.000$), and ‘Time’ ($p=0.003$). The result echoed the findings of Allan’s (1992) and Amer’s (1993).

Table 7. The Relationships Between Test-Taking Strategies and Test Performance

Strategy	Unstandardized β	Standardized β	t value	Significance
Intercept	-24.602			
Guessing	8.361	0.193	3.970	0.000
Inference	6.493	0.142	3.131	0.002
Order	-0.280	-0.006	-0.143	0.887
Time	5.549	0.146	2.964	0.003

$F = 4.356$, $p = 0.000$, $R^2 = 0.141$

The results also indicated that ‘Inference’, ‘Guessing’ did not contradict each other. Table 5 seems to reveal that higher test performers also apply ‘Guessing’ more than their counterparts. In addition, the application of ‘Time’ leads to better test performance too. Better time allocation helps testees solve problems without hurry and makes them think carefully.

Nevo (1989) indicated that most of the correct responses were obtained by the use of contributory strategies. Nevertheless, Purpura’s (1998) indicated that a result which might be explained by the fact that high-ability test

takers have achieved a higher degree of automatization, thereby having less of a need to use strategies (Purpura, 1998). ‘Inference’, ‘Time’, and ‘Guessing’ could be viewed as contributory strategies which help improve test performance. However, it appears that some language learners have a ‘gift for languages’ which others lack. Maybe the gifted language learners need less or even none strategies to process tests just as what Purpura (1998) claimed.

Conclusions and Implications

Conclusion

The results of the study basically echoed the findings of Anderson’s (1991) that the test performance was influenced by strategies the test takers employed, the characteristics of tasks, and the characteristics of test takers. After devoting deeper observation, it may be the case that test-taking strategies might play the role of a mediator between test taker characteristics and test performance. That is to say that the test taker characteristics affect the use of the test-taking strategies and then the strategies influence the test performance. Therefore, we draw the following conclusion based on the results of the study and Yien’s (1999).

1. Females applied significantly more than males on ‘Time’ and then significantly outperformed their male counterparts on the English test.
2. Industrial E & M and Chemical majors applied more than Mechanical majors on ‘Time’ and ‘Guessing’ respectively; therefore, they excel Mechanical majors on the English test.
3. High school graduates applied significantly more than those of vocational high on the application of ‘Inference,’ ‘Time,’ and ‘Guessing’ and then significantly excelled their counterparts of vocational high school on the English test.
4. Students from most urbanized areas applied ‘Inference’ significantly more than counterparts of rural areas and then the former significantly outperformed the latter on the English test.
5. Students of public schools applied ‘Inference,’ ‘Time,’ and ‘Guessing’ significantly more than those of private schools, and then the former significantly performed better than the latter on the English test.

Implications

Including Yien’s (1999) findings concerning the relationships between test taker characteristics and test performance, the study extended the research to investigate the relationships among test taker characteristics, test-taking strategies and test performance. The results revealed that there were significant relationships among test taker characteristics, test-taking strategies, and test performance. The results of the study seem to suggest higher linguistic competence is more likely to lead to the selection of more effective testing-taking strategies. And in reverse, it might also imply that the selection of effective test-taking strategies lead to better test performance.

Accordingly, the author suggests EFL/ESL teachers to include effective test-taking strategies in EFL curriculum and pedagogical activities. It is suggested that students, especially students of low English proficiency, should be trained to apply the effective strategies ‘Inference’, ‘Time’, and ‘Guessing’ to improve their testing score and build up their learning confidence as soon as possible. These contributory strategies might improve their score sooner than unexpected. Then, the learning interest can be activated; consequently, students will establish their confidence in learning English.

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Forty Years of the Language Laboratory Association of Japan

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In the latter half of the 1950s, “Oral Approach” was adopted in Japan. In the 1960s, it spread rapidly and widely in junior and senior high schools. Along with this approach, language laboratories were established everywhere.

It was thought natural that such a sound-oriented language laboratory study system should be put into practice more widely in junior and senior high schools. However, there were some bottlenecks in its development and deployment.

There were, I think, three problems in relation to senior high schools.

One was the problem resulting from the curriculum. In those days the standard number of English lessons per week was five, three of which were allotted to “readers” and two, to “grammar and composition”. The teaching of the textbooks had priority. Language laboratory work was hard to incorporate.

Another was the problem of hardware. The equipment for a language lab was expensive. So it was impossible to have language labs installed in a lot of schools at a time.

The third was the problem of software. Language lab work was pattern- practice-centered, monotonous and dull. There were few teaching materials that students showed a great interest in.

In 1971, when I worked at an Osaka Prefectural High School, the Education Board proposed that a language lab be installed. I thought the conventional *audio-lingual* language lab system would come to a standstill as it stood. Language and culture are inextricably woven together. So students should experience “culture” vicariously through the *audio-visual* language lab system and should satisfy their intellectual interest.

Thus I developed a new booth where students could watch TV in pairs (see Figure 1), videotaped the English programs of the NHK school broadcast, classified them from the point of “culture patterns”, and consequently prepared “English not easily obtainable in class work.”

In this way language lab work would help students acquire a heuristic method and voluntary study habits.

I named this approach the “Cultural Approach”, and advocated it in 1972.

In evaluating “culture” materials, I attached special importance to “qualitative” as well as “quantitative” evaluation.

As for “quantitative” evaluation, I examined “interest reactions” as well as “comprehension reactions” (see Figure 2).

As for “qualitative” evaluation, I examined, by using matrixes (see Figure 3), how the students grasped the “culture”, and also conducted a follow-up survey on how the students changed in the way they grasped it.

Thus in the “Cultural Approach”, there are, I believe, unlimited possibilities still to be exploited.



Figure 1. The first newly-developed booths where the students could watch TV in paris (1971)

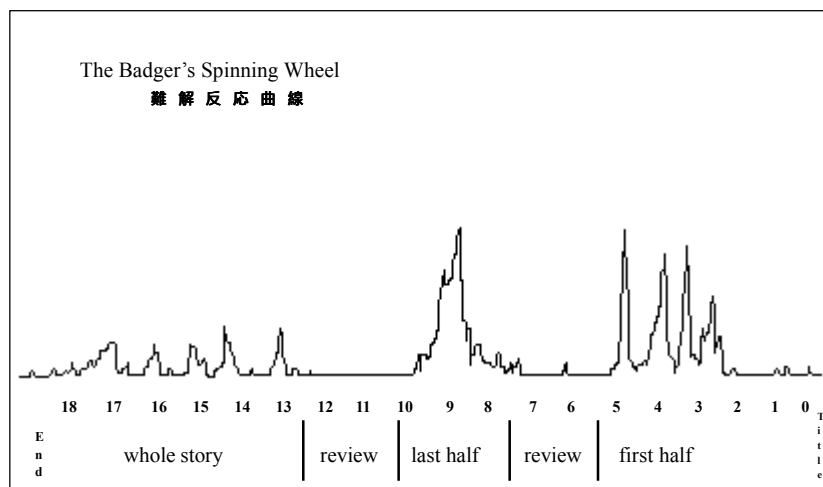


Figure 2. An example of a “Comprehension Reaction” graph

STRUCTURAL				
FLAT				
LINEAR				
PARTIAL				
Comprehen- sion Thought	FACT UNDER- STANDING	INTEREST IMPRESSION	ANALOGY INTEGRA- TION	DEVELOP- MENT

Figure 3. A matrix for “Qualitative” evaluation

Globalization and Education

Setsuko Hirao [Moderator]

Aichi University, Japan

Panelists

Keiko Nakata, Nagoya University Affiliated Senior and Junior High School, Japan

Shuji Ozeki, Chubu University, Japan

Yoshikazu Yanagi, Nagoya Gakuin University

Tim Hoffman, Chubu University

Setsuko Hirao, Aichi University

Introduction

Globalization is a fact, and the language education and technology for international communication across the globe is one of the most crucial issues today. Teachers should try to help students improve their communicative competence in order to promote their mutual understanding in the global village.

This forum discusses not only our teaching activities using such new media as computers and the Internet in language classes, but also students exchange programs between schools, colleges and universities abroad.

The purpose of this forum is to study the process and system of the Internet real-time-communication, focusing on the validity of the communicative approach to English language teaching as well as practicability for cross-cultural understanding.

The main activities of each high school or university are:

1. International e-mail exchange programs by the Internet
2. “Show and Tell” performance on the web sites
3. Production of the authentic teaching material on the web sites
4. Intensive English courses for the college students who are going to study abroad
5. Student exchange programs between sister universities
6. International student exchange and intensive Chinese courses in China

The first panelist, Ms. Keiko Nakata, presents “Show and Tell” performances on the web sites and “Peace and International Understanding via E-mail” project called “Passage to Hiroshima” by using the Internet and videos at Junior and Senior High School affiliated to Nagoya University. The presenter is planning to make Hiroshima field work into a complete web based interactive study material, meeting the A-bomb survivors, and exchanging ideas with the students in other countries by e-mail.

The second speaker, Prof. Shuji Ozeki, reviews his experiences in variety of the international e-mail exchange programs as well as development of supporting resources at Chubu University. Students were encouraged to find at least three partners of different cultural backgrounds so that they can keep themselves busy and have a good resources of information to compare with their own culture and write essays or compose web pages on their

experiences in the exchange. This motivated the students and gave clear ideas of the required tasks especially to lower-level students. The presenter also suggests what are important for successful e-mail exchange programs.

The third panelist, Prof. Yoshikazu Yanagi, Nagoya Gakuin University, presents the student exchange programs between sister universities in the U.S.A, Canada and Australia as one of the special features of the English curriculum. The past, the present and the future of the short-term programs, long-term programs and mid-term programs are introduced. Based on 10 years of experience, the presenter has concluded that studying in a different culture is so valuable for students that it is necessary to send as many students as possible.

The fourth presenter, Mr. Tim Hoffman, introduces “PASEO” (Preparation for Academic Study In English Overseas) program, which is a joint program of Chubu University and Ohio University. It is a 4-year comprehensive English for Academic Purposes curriculum including both skills-based and content-based instruction which prepares the students, no matter what their academic majors for academic study in English-speaking nations. The presenter suggests highlight future directions for PASEO and offer suggestions for replication or adaptation at other Japanese colleges and universities for the global activities.

The last panelist, moderator, Prof. Setsuko Hirao, addresses the globalization in education, introducing the international student exchange project between Aichi University and Nankai University, China. The project is meant for the global communication and cultural awareness by means of Chinese, the language other than English. The conclusion has been made by evaluating the effectiveness of the intensive language courses and the results of students’ presentations on field works made in China. The students’ positive and enthusiastic attitudes towards the intercultural communication will lead to the borderless globalization in education.

The forum was successful in sharing ideas with participants from around the world who face the same problems and suggesting the further pedagogical implications for communicative language teaching and effective use of technology. The forum concludes that the positive and aggressive attitude towards the international communication by means of the Internet will contribute to globalization in education as well as development of intelligent technology.

Home, Sweet Home, on the Internet

—Homepage Making Project at a Junior College—

Kiyoko Kinugawa

Naoko Matsumoto

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Abstract

The prevalence of the Internet has broadened the scope of teaching and learning English using computers. It makes possible for both teachers and learners to make the best of the latest technology as active and creative learning tools. The "Homepage Making Project" integrates many facets of computer use such as word processing, graphics, or doing the Internet searches into a language learning material, and provides learners with opportunities to express themselves in English creatively and freely. This paper will outline the "Homepage Making Project" in the course of "Internet English" at a junior college, and discuss its advantages in language learning. It will also explore possible difficulties in the project and ways to overcome them.

Introduction

Computers and the Internet have had a big impact on the world of English learning and teaching. Many advantages of teaching English using computers have been discussed, and there are still unlimited possibilities to explore in the computer-mediated teaching. Taking a hint from these beneficial points discussed, some English teachers at Saitama Women's Junior College (SWJC) have been eager to introduce the latest technology to their teaching methods. The "Homepage Making project" is one of the approaches to have students learn computers and English at the same time. The main objectives of this project are to improve students' abilities to express themselves in English and to enhance their motivation to learn English independently and interactively.

Some researchers discuss how motivational and advantageous the "Homepage Making project" is in terms of developing computer skills and of learning English. Regarding the development of computer literacy, the project integrates many facets of computer technology: creating word documents, graphics, and artwork, searching the Internet and exchanging e-mail with key pals (Trokeloshvili & Jost, 1997).

As regards language learning, the advantages are diverse: (a) Learners quickly realize the importance of acquiring English skills as they browse the Internet to obtain necessary information for their homepage and find that most of it is in English, the major language of the Internet (Fox, 1998; Muehleisen, 1997a). (b) Learners are exposed to more authentic, naturally occurring English beyond the classroom (Fox, 1998). (c) Learners are able to create their homepage individually and at their own pace utilizing their English skills and computer skills: teachers can, therefore, deal with mixed-ability classes (Muehleisen, 1997b; Sela, 1995). (d) The class can be interactive when the teacher and other students give the creator feedback and advice (Muehleisen, 1997a). (e) Learners are able to exhibit what they have learned by making their own homepage (Muehleisen, 1997b; Singhal, 1997). In addition to these advantages, the "Homepage Making projects" changes learners' learning style from teacher-given or teacher-designed learning to learner-based or self-directed learning.

This paper will explain the "Homepage Making project" with the course description of "Internet English" and discuss its advantages and difficulties in teaching and learning English.

An Overview of the Homepage Making Project in the “Internet English” Course

The main objectives of the “Internet English” course at SWJC are to familiarize learners of English new technology, i.e. computers and the Internet, and to have them express themselves in English utilizing these equipments and their already-established English skills. Teachers instruct them not only in language aspects but also in computer techniques, and encourage them to write English journals and to create homepage without being afraid of making mistakes. Students are actively and independently engaged in language learning using the technology and their English knowledge, and freely express themselves in English.

Goals of the “Homepage Making Project”

1. To give students opportunities to browse the Internet and search for necessary information.
2. To have students learn that it is fun, motivational and instructive to express their thoughts about their favorite things on their own homepage.
3. To have students take initiative and responsibility for their own learning.
4. To have students learn cooperatively in the process of making a homepage.
5. To encourage students to be more aware of what is going on around them globally and to communicate what they are thinking to their audience.
6. To have students express themselves freely and creatively with easily accessible computer techniques.
7. To cultivate students’ computer literacy as well as their English skills.

Class Structure

In Saitama Women’s Junior College (SWJC), 20-30 students have enrolled in our “Internet English” course every year since 1999. The class meets once a week for 80 minutes in a computer room equipped with 40 computer terminals. Not all the computers at SWJC are set up for Internet access, but they are connected in a Local Area Network (LAN). Using the network, students are able to upload and save their on-going homepages in their personal folders in the designated server. Thus, they can also browse their own and other students’ Web sites using the campus LAN system, which is accessible only by SWJC students and faculty.

The Procedure for the “Homepage Making Project”

1. Students decide to work individually or in a group.
2. They choose a topic which they want to introduce and share in their homepage.
Depending on the topic, they decide whether they work individually or in a group. Even if their interest is different, they can form a group to make a homepage together because all they have to do is to upload their homepage on the same folder in the server. There is no restriction on topic selection because learning about their favorite topic in English itself can be motivational. Therefore, their themes are varied every year, ranging from celebrities in the world, specific countries such as China or France, to their favorite restaurants or coffee shops or festivals in Japan.
3. Students start to gather information from the Internet.
After selecting a topic, they start to do the Internet searches and gather information on their favorite topic. Not all computers are connected to the Internet, so students take turns using the certain number of computers with the Internet access, and to save necessary documents and pictures, they are provided with a floppy disk.

4. Students make a homepage with Microsoft Word 98.
 There are several ways to make documents with Hyper-Text Markup Language (HTML), but Microsoft Word (MS-Word) 98 was chosen for the sake of simplicity and ease of use in this project because it has the advantage of being able to save documents in an HTML format without the necessity of typing complicated HTML tags. Appendix I will explain how to make a simple homepage with the software.
 There is no restriction on how to make a homepage, but they have to create it in English and at least three different pages (“self-introduction,” “favorite,” and “recommend”), which should be linked together. The “self-introduction” page, which is usually the gateway to their homepage, should write about themselves in over 100 words. The “favorite” page should include their selected topic explaining why they choose it, how they like it, what they want to share it, etc., and some pictures on it. The “recommend” page should contain the site information (URL=Uniform Resource Locator) to give the audience the information about their topic. These are the basic criteria of this project. If students want to create more, they can expand their homepage as they wish.
5. Students check their created homepage with Internet Explorer (browser software) and modify it if necessary.
 They need to check how their homepage created with MS-Word looks with Internet Explorer, because to see it with the word-processing software and with the browser software can be different. They are to modify the page if necessary.
6. Students will make an oral presentation about their homepage. (Final week)
 They are given about one to three minutes and make an oral presentation about their homepage. They can talk about the content and interesting parts to share and difficulties in making the homepage. The presentation can be done either in English or in Japanese although they are awarded additional points if they make an oral presentation in English.

Advantages

1. Students’ satisfaction and a sense of achievement.
 Students are satisfied by making a homepage on their favorite topics and feel a sense of achievement. The latest sophisticated technology enables even beginner-level students to make attractive and informative documents. The beauty of the pages the students have produced is enough to motivate them to create better ones. In this way, the homepage making project shows both teachers and students alike successful outcomes of what they have learned.
2. Self-directed learning and cooperative learning.
 Through self-directed learning and cooperative learning, students will not feel nervous, embarrassed or intimidated about learning English. They choose and set the topics and pace of work, thus are given more freedom, independence and responsibility in learning. They are allowed and encouraged to cooperate and collaborate while working, helping each other out through difficult patches and working out ideas to improve each other’s pages.
3. Chances to find authentic language materials.
 Students are able to find and study authentic language materials via the Internet. One problem in EFL classrooms is that it is difficult for students to be exposed to authentic, naturally-occurring English. But since the main language of the Internet is English in its current status, students have plenty of opportunities to immerse themselves in it while browsing the Internet and reading for information.

4. Students can become computer-literate.

Computer skills are fast becoming taken for granted in the contemporary competitive business world and even in everyday life. Many uses of computers are fairly mundane (writing reports and e-mail, information-gathering on the Internet, account-checking, online shopping) and may or may not be particularly creative.

In the homepage making project, students learn not only how to type and to do Internet searches, but also how to lay out web pages and to select and insert pictures and graphics in order to make their homepages attractive and comprehensible. In doing so, they acquire or improve basic computer literacy and English skills, while making use of their judgment and creativity as well.

5. Peer stimulation from other students' homepages.

Sometimes students are impressed with other students' work and are stimulated to try the same techniques themselves. Without being taught, some students venture into using sophisticated word-processing functions. This implies that the homepage making project is advantageous and motivational not only because students try to make their homepage attractive enough for their audience, but also because they can share the new techniques they have learned with their peers. As a result of positive peer stimulation and a climate of mild "rivalry," students' homepages tend to become more sophisticated and more fashionable.

Challenges

1. Evaluation: quality vs. quantity.

Homepage evaluation is difficult because we have to weigh quality and quantity. Quality here means whether students can make a homepage that is well-designed, well-organized, and attractive enough for the audience. Quantity means whether students can provide the audience with sufficient information.

As a solution to this difficulty, we present important criteria to the students in advance. We also give them some "required" tasks and conditions such as a minimum number of words to be written, writing headlines and captions, etc., that are closely evaluated. In more subjective areas, we can let fellow students judge the quality (e.g., Is the homepage attractive enough?) and quantity (e.g., Is the given information sufficient?) of the homepages made by students. This emphasizes that peer evaluation as well as teacher's assessment should be taken into consideration.

Another challenge is how to assess a homepage which is creatively written and well-constructed, but has numerous errors vis-à-vis a homepage which is grammatically correct, but has limited content and materials poorly put together.

In this case, we attach greater importance to creativity and quantity than to correctness. As to grammatical correctness, all we require of the students is that they can make themselves understood in English. We leave grammatical correction to a later stage, which conforms to learning in natural (non-classroom) situations, since one of the pitfalls of English as taught in Japan is that overemphasis on correctness often makes students shy away from using English at all. Therefore, we prefer a homepage in which students use their English skills as creatively and challengingly as they can to a homepage that is grammatically correct but with limited or unimaginative content.

2. The possibility of plagiarism.

Some students may be tempted to plagiarize when they "borrow" some pictures or text from the Internet on their homepages without any attributive notes because it is very easy to download

these things without any degradation in quality. We use this opportunity to teach students “netiquette (= net etiquette)”, academic ethics, respect for others’ work, and the altruistic sharing spirit of the Internet community. We also explain how to cite and link pictures and texts on their homepages using proper credits and attributions.

Conclusion

Homepage making projects can encourage students to learn language by themselves. In this project, motivation was the key element to successful learning. This project gives learners freedom and opportunities to learn English in their own way using computers and their favorite topics. Also, by searching the Internet, students venture into a new world of their selected topics, like it and are familiarized with it, and take to share the findings with the audience through their own homepage. The interaction among learners, teachers and audience never ends and enhances their motivation to modify their homepage to make it better.

Plagiarism is an unavoidable thing. In this redundant information era, it is easy for students to download celebrities’ pictures and documents or to upload them without changing any parts on their homepage. It is necessary for both teachers and students to understand what the copyright is and to create a homepage full of originality and with no plagiarism.

Aside from this challenge, the “Homepage Making project” has unlimited possibilities to motivate students to learn English inside and outside the classroom and, thus, encourages them to learn English independently and interactively.

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Appendix

Procedures for making a simple homepage with Microsoft Word 98 or higher

1. Start Microsoft Word and choose a new document.
2. Type anything you want for your homepage.
3. If you want to insert a picture, follow the instruction:
 - a. Position the place in the document where you want to insert a picture.
 - b. From the “Insert” menu, choose “picture.”
 - c. There are some options to choose pictures from the “picture” menu, so choose the one you are looking for. For example, if you want to use a picture from “clip art,” choose it. If you want the one you drew, choose “from file.”
 - d. Choose the picture and click “open” to insert it.
4. Save the on-going or finished document in Microsoft Word format just in case of trouble with saving it as HTML: Choose “Save as...” from the “File” menu and enter a title like “My Homepage.”
5. Next, save the same document in HTML format: Choose “Save the file in HTML format” and enter the title “index.” You will be asked which language code you will use, choose the one you want. For example, if you are making your homepage in English, choose “American/ European language code.”
6. Quit Microsoft Word.

In order to view the created homepage, double-click the “html” file that you saved on your computer. It will automatically open the browser software, “Internet Explorer,” and you can check the “html” file that you made. If you use “Netscape Navigator/ Communicator,” open the browser first and choose “Open” from the “File Menu.” Choose an option “Open the file with Navigator,” and you will be able to check the document.

How Do Pre-Intermediate Learners of Japanese Read Passages?

—Exploring the Eye Movements of JSL Learners—

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Abstract

The purpose of this study was to investigate the process of pre-intermediate learners' reading in Japanese. An experiment was conducted in which learners' eye movements were recorded using an eye camera while they read two different passages in Japanese, followed by an analysis of the obtained data. The experiment was implemented with ten subjects at the pre-intermediate level. The results were as follows: (a) No statistical difference was found in reading time of each sentence, that is, there was no tendency to read slowly the first part of the passages or longer sentences. (b) Eye-fixation and/or regressional movements often occurred on the words and sentence patterns that were unknown to the readers or they had just learned. (c) There was no significant difference in terms of the number of eye-fixation between efficient readers and less-efficient readers. (d) Efficient readers had a tendency to read back more than less-efficient readers did

Introduction

Learners of Japanese at the pre-intermediate level vary in their level of comprehension of written passages. While basic Japanese focuses on comprehension and production of simple sentences, intermediate level requires that students comprehend complicated compound sentences or complex sentences, as well as the structure of a whole passage. In analyzing comprehension issues among learners, there seems to be a great deal of individuality as to whether their problems lie in acquiring and/or utilizing their knowledge of grammar, characters, vocabulary, and/or the structure of passages.

Some researchers have been using an eye-camera for the purpose of investigating eye movement while people read passages, but these researches have been conducted mainly with readers reading in their mother tongue. While reading passages, eye fixations and saccades are repeated until the end of a passage and regressions sometimes occur in the process of constructing the meaning of the passage (Just & Carpenter 1987). Using records of eye movement through an eye-camera, fixation points and frequency, regression points and frequency can be measured along with reading time.

Investigations of eye movement in reading passages in one's mother language have shown that the frequency of fixations decreases when a reader reads an easier passage (Just & Carpenter 1987). When native Japanese read passages, Kanbe (1986) maintains that each fixation time varies from 250 to 350 msec., the average span between one fixation and the next fixation is 3.5 characters, regressive fixations constitute less than 10 percent of all fixations, and that Kanji plays an important role in supplying information for determining the points of fixation. Shigematsu et al. (1993) demonstrated that Japanese language learners from China have a tendency to be reliant upon Kanji when reading passages in Japanese.

In this study, the research of recording and analyzing eye movement while reading a passage has been implemented using an eye-camera with the intent to clarify the process of comprehending a Japanese passage as a second language learner. Results of analysis of the most optimally defined fixation point while reading a passage showed that JSL learners at the pre-intermediate level took approximately 500 msec. per character. That means

they can read 120 characters in one minute and that the mean fixation frequency is twice per character on the first read through (Konosu and Suzuki 1995).

In addition, records of each learner's eye movement have been plotted out and the detailed process of reading has been analyzed for the purpose of investigating differences in the reading process between highly proficient learners and less proficient learners. This paper includes an overview of this experiment, along with information about specific features learners display when reading. This work also offers some advice for supporting the reading comprehension of learners based on an analysis of the results of the experiment.

Purpose of the Experiment

The purpose of the experiment was to clarify the process of reading passages adopted by learners at the pre-intermediate level in relation to the curriculum, the difficulty of a given passage and the particular learner's reading ability. A further goal was to examine effective ways to assist the learner in reading in a way that was in line with the learner's style. The analysis was designed to demonstrate: (a) whether reading speed differs within a sentence, (b) what kind of features the fixation points and regression points have and whether frequency of fixation and/or regression differ according to the difficulty of passages, (c) whether learners highly proficient in reading and less proficient learners differ in reading time, frequency of fixation and/or regression.

Method

Subjects

The subjects were ten undergraduate students at the pre-intermediate level¹ in Japanese, consisting of five highly proficient learners in reading, which included two Chinese-language-background students, and five less proficient learners.

Procedures of the Experiment

Two passages were prepared. One passage was 232 characters long and at the pre-intermediate level and the other consisted of 187 characters and was written at the low intermediate level. After adjusting the eye camera, passages were presented to the subjects on the screen of a 40-inch monitor. Subjects sat 160 cm away from the monitor. The subjects' eye movements while they read the passages were recorded on a VCR using an eye camera. The Eye Movement Monitor which was made by Takei Scientific Instruments Co., Ltd. was used as the eye camera for this experiment. After the subjects finished reading, their comprehension levels for the passages were examined through oral interviews.

Methods of Analysis

The eye movements recorded while reading the passages were played back frame by frame (33 msec.). Movements were tracked and a locus of eye movements was made for each passage. Reading time was also calculated for each sentence in the passages. Based upon the loci, fixation points and frequency and/or regression points and frequency were investigated. Whether there were differences based on the passages and/or whether differences in reading ability caused different processes of eye movements was also investigated.

Results

The Reading Time for Each sentence and the Reading Rate

Statistical processing was not applied to the reading time of each sentence in Passage One because of the inability to differentiate which sentence a subject was reading for some of the data. The reading rate of Passage Two and the reading times for Passage One and Two are illustrated in Tables 1 and 2. One-way analysis of variance was applied to investigate whether the reading rate differed from sentence to sentence in Passage Two. The results showed no significance ($F(2,18) = 1.71, p > .10$).

As a result of the analysis of differences between highly proficient learners (High) and less proficient learners (Low), no significant difference was found (Passage One: $t(7) = 0.69^2, p > .10$; Passage Two: $t(8) = 0.38, p > .10$).

Table 1. Reading Rate of Each Sentence in Passage Two

	First sentence	Second sentence	Third sentence
Mean	1.66	1.73	1.87
SD	0.52	0.49	0.46

(characters/second) N = 10

Table 2. Reading Time (converted into a passage of 100 characters)

	Passage One		Passage Two	
	High (N = 4)	Low (N=5)	High (N = 5)	Low (N = 5)
Mean	40.83	45.29	60.12	63.72
SD	6.55	9.84	14.12	17.14

(seconds)

Table 3. Amount of Fixation and Regression (converted into a passage of 100 characters)

	Fixation				Regression			
	Passage 1		Passage 2		Passage 1		Passage 2	
	High (N = 5)	Low (N = 5)	High (N = 5)	Low (N = 5)	High (N = 5)	Low (N = 5)	High (N = 5)	Low (N = 5)
Mean	25.00	26.48	35.68	32.42	27.40	11.30	46.30	10.32
SD	11.77	17.37	16.64	19.37	13.95	9.77	27.53	3.80

(characters)

良くないイメージの両方を持っています。国にいた時、日本人は親切な人ばかりだと思っていましたが、駅でたくさんの荷物を持った弱そうな女の人が階段を上ろうとしている時、おおぜいの人は何もせずに通りすぎてしまうし、こんだ電車

Figure 1. Frequent fixation points of more than three readers (Passage One)

一番広く行われているのが、焼いてしまう方法です。家庭の生活から出るごみなどは、どろどろとしてその90パーセント以上は水分で、焼くことが難しいのに、それをエネルギーが足りないこのごろでも石油を使ってかわ
て焼いています。このような場所を作らなければ、

Figure 2. Frequent fixation points of more than three readers (Passage Two)

良くないイメージの両方を持っています。国にいた時、日本人は親切な人ばかりだと思っていましたが、駅でたくさんの荷物を持った弱そうな女の人が階段を上ろうとしている時、おおぜいの人は何もせずに通りすぎてしまうし、こんだ電車

Figure 3. Parts where more than three readers regressed in reading (Passage One)

一番広く行われているのが、焼いてしまう方法です。家庭の生活から出るごみなどは、どろどろとしてその90パーセント以上は水分で、焼くことが難しいのに、それをエネルギーが足りないこのごろでも石油を使ってかわ
かして焼いています。このような場所を作らなければ、

Figure 4. Parts where more than three readers regressed in reading (Passage Two)

Points and Amounts of Fixation and Regression

In this analysis, when a fixation continued more than 33 msec., it was determined to be a point of fixation. Parts that were fixated upon more than twice were regarded as frequent fixation points. The range in a passage where a learner read back over something was considered to be part of a regression. Frequent fixation points and parts of regression are shown in Figures 1 to 4.

The points of frequent fixation can be categorized as (a) unlearned vocabulary or newly learned vocabulary such as “弱そうな”, “親切な人ばかり”, “おおぜいの”, “通りすぎてしまう”, “行われている”, “以上は水分で” and “石油”, (b) learned vocabulary with unlearned meaning, for example, “一番広く行われているのが”, “生活から出るごみ”, (c) a clause which consisted of a combination of individually learned grammar, such as “荷物を持った弱そうな女の人”, which is the noun phrase that was included in the noun modifier clause and an expression of mood, (d) parts where more than two types of processing are needed, such as activation of vocabulary knowledge and understanding of the demonstrative pronoun, for example, “このような”, “何もせずに”, (e) unlearned Kanji such as “荷物”, “階段”, “親切”, “以上”, “焼く”, “難しい”, “石油”, or parts presenting new information such as new readings of Kanji, for example, “行う”, “以上”, “足りない”, “石油”.

Regressions were often found in (a) parts in which learners need to infer unlearned vocabulary or expressions and/or the meaning of a sentence as a whole, for example, “(親切な) 人ばかりだ”, “(階段を) 上ろうとしている時”, “生活から出るごみなどは、どろどろとして”, “(90 パーセント) 以上は水分で”, “エネルギー”, (b) long clauses in which the learner needs to recognize the scope of the subject and predicate and construct each as a whole meaning, for example, “一番広く行われているのが、焼いてしまう方法”, “生活から出るごみなどは.”

In this analysis, the number of characters in frequent fixation points was regarded as the amount of fixation and the total number of characters within the range of reading back over an area was defined as the amount of regression. The results of the amount of fixation and regression are shown in Table 3. A comparison of the amount of fixation between Passage One and Two indicated that subjects tended to fixate more often in Passage One than Passage Two ($t(9) = 1.97, .10 > p > .05$). The amount of regression in Passage One was compared with that of Passage Two and the results indicated no significant difference ($t(9) = 1.57, p > .10$).

The amount of fixation of highly proficient readers (High) was compared to that of less proficient readers (Low) and no significant difference was found (Passage One: $t(8) = 0.14, p > .10$; Passage Two: $t(8) = 0.27, p > .10$). Comparison of the amount of regression between highly proficient readers (High) and less proficient readers (Low) indicated that highly proficient readers tended to regress more frequently than less proficient readers in both passages (Passage One: $t(8) = 1.89, .10 > p > .05$; Passage Two: $t(4) = 2.59, .10 > p > .05$).

The results of the experiment are summarized as follows:

1. No statistical difference was found in the reading time of each sentence, that is, there was no tendency to read the first part of the passage or longer sentences slowly.
2. Eye-fixation often occurred on the characters, words and sentence patterns that were unknown to the readers or that they had just learned, while regression occurred on unknown words and/or sentence patterns and long clauses.
3. Readers tended to fixate more in Passage Two than Passage One, while there was no significant difference with regard to regression between Passage One and Two.
4. No statistical difference was found in the reading time between proficient readers and less proficient readers.
5. There was no significant difference in terms of the number of eye-fixations between proficient readers and less proficient readers.
6. Proficient readers had a tendency to read back over items more often than less proficient readers.

Discussion

The Reading Process of Pre-intermediate Learners

When pre-intermediate learners read a passage at the same level as the one in the experiment, they seem to read slowly without altering their speed of reading. The possibility remains that readers do not alter their reading rate while reading a relatively short passage consisting of about two hundred characters. Results revealing that readers tended to fixate more in Passage Two than Passage One concur with the preceding research, which claims that readers fixate less in easier passages. The result of no difference being found between the two passages may indicate some possibility of interaction between the difficulty of a passage and the proficiency of the reader, based on the fact that proficient readers regressed more than less proficient readers and proficient readers regressed more in Passage Two than Passage One. Meanwhile, less proficient readers regressed more in Passage One than in Passage Two. Further research needs to be done.

The Difference between Proficient Readers and Less Proficient Readers

The results of the experiment demonstrated that readers need considerable time to process characters, vocabulary and sentence patterns that they have just learned, as well as unknown ones. Although proficient readers took about the same time as less proficient readers for both readings, they tended to regress more than the others. Readers have to process information that enters their sight on the spot, holding onto prior information related to the passage, for the purpose of making a whole meaning network of one sentence or one passage. Proficient readers seem to be able to construct the meaning of the sentences and passages as a whole so as to process information entering their sight and previous information at the same time. On the contrary, less proficient readers need to allocate most of their capacity to processing information that is in sight and do not have sufficient processing capacity to relate information in sight to prior information, which is the purpose of regressing during reading.

Some Advice for Assisting Learners in Reading

Proficient readers fixated less on Passage One and more on Passage Two with regression, so it can be inferred that there is a need to grapple with the activation of each concept, which consists of comprehending the sentences and the passage and relating the concepts to one another. Proficient readers could be assisted by being provided with passages that are about the same difficulty as Passage Two and being given tasks to create a meaning network of sentences and/or passages, such as comprehension practice of noun modifiers consisting of more than two sentences, and anaphoric relations, etc.

Less proficient readers could comprehend Passage One and seemed to utilize most of their processing capacity on recognition and activation of information in sight and were not able to spare any processing capacity for synthesizing the concepts of the passage. They could be assisted by being given practice aimed at decreasing the time needed for processing each component of the sentence and/or the passage. Furthermore, they could complete exercises designed to relate all of the concepts of the passage together and construct the meaning of the passage as a whole. In the case of learners not being able to comprehend Passage One-level sentences, they could be helped by being given practice in getting used to constructing networks of meaning of sentences and/or passages consisting of learned vocabulary and sentence patterns. Less proficient readers would also benefit from exercises that demanded regression.

Notes

1. Learners at the pre-intermediate level refers to learners that have acquired a vocabulary of 2,000 words and 400 to 500 Kanji characters, in addition to Hiragana and Katakana. They are able to manage basic daily communication in Japanese.
2. The reading time in Passage One could not be measured for one highly proficient learner because of a locus problem.

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私が日本へ来たのは3か月前で、その間に私の中の日本のイメージは少しかかりました。今では、いいイメージとあまり良くないイメージの両方を持っています。国にいた時、日本人は親切な人ばかりだと思っていましたが、駅でたくさんの荷物を持った弱そうな女の人が階段を上ろうとしている時、おおぜいの人は何もせずに通りすぎてしまうし、こんだ電車に年をとった人が入ってきても、寝たまま気がつかずに席をかわってあげない若者も多いようです。人を助けようという気持ちはあまりないのでしょうか。

(Reading of all Kanji were marked with Furigana in original)

Figure 5. Passage One

毎日出てくる家庭や会社のごみを処理する方法として今一番広く行われているのが、焼いてしまう方法です。家庭の生活から出るごみなどは、どろどろとしてその90パーセント以上は水分で、焼くことが難しいのに、それをエネルギーが足りないこのごろでも石油を使ってかわかして焼いています。このような場所を作らなければ、新しい住宅地やニュータウンを作ってはいけないという市町村も各地に多いのです。

(Reading of all Kanji were marked with Furigana in original)

Figure 6. Passage Two

How Effective is a CALL System When Promoting TEFL Methods?

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Abstract

The present study examines the effectiveness of the teaching methods using a CALL system. Three assumptions are: (a) a multimedia type of CALL material is effective in the increase of English communication ability of the learner; (b) the media of a computer installed for the class activities is effective in learning English, and (c) such effectiveness is remarkable for lower level learners. 80 Japanese university students majoring in applied international studies who were taking English I, and III (mainly for listening practice in CALL laboratory, in 1998-1999), served as subjects. They took two tests, completed two questionnaires, and made achievement records of learning the CALL material. As a result of performing the correlation analyses on the data of tests, questionnaires, and leaning records, our assumptions were almost verified. We could conclude that a CALL system is fairly effective when promoting TEFL methods.

Objective

We Japanese are in the middle of drastic change in the methods of foreign language teaching for communicative use. With the rapid increase of multimedia use in the classroom teaching, we came to revise the interactive learning method by using electronic teaching material, dictionary and internet facilities. There are many reports that the computerized class activities would exert a favorable influence on the learner's motivation, and the multimedia teaching materials and CALL are effective in promoting TEFL methods. The objective of the present study is to examine how effective the teaching methods using a multimedia type of CALL material are with reference to three kinds of data: the test data, the learner's learning records, and the questionnaires on their learning experience.

Background

The freshman students were divided into six graded classes based on the placement tests given at the beginning of the academic year. They must take the English courses separated into the four skills of reading, writing, listening and speaking, using the integrated learning materials and syllabus. Among these separate courses, the listening-centered course was taught by means of the traditional video-based instruction and the new networking type of multimedia CALL materials.

A multimedia type of CALL material contains the dialogues of some stories whose purpose is to teach British and American language and culture. The material includes the dialogues for listening, speaking, writing and reading distributed in a well-balanced way. The CALL material is particularly valuable in picturing the sound waves and intonation on the screen. It has also the function of roll play, recording and reproducing of the student's utterances on a sentential level and, comparing the sound waves of the model with his own.

In addition, the CALL material can give dictation practice indicating the correct and incorrect spelling. The students can conduct their individual practice according to their individual interests and needs on demand by logging into the computer using their registered identification number, which has already been registered in the computer network not only in their regular classes but also in their free time. It is also possible for a teacher to

observe and grasp the students' learning process and to advise them by reserving all the processes of their learning, that is, the table of the accumulation of the student's learning data, the table of their achievement, the table of frequency of their use of computer system on the file server of the central computer. It was suggested that students should use 20-25 minutes for practice in the classes and they were encouraged to use the CALL computer during their self-study hours.

Research Design

Assumption

Assumption 1: A multimedia type of CALL material is effective in the increase of English communication ability of the learners.

Assumption 2: The media of a computer installed for the class activities is effective in learning English.

Assumption 3: Such effectiveness is remarkable especially for lower level learners.

Subjects and time allowed for study

2 classes in the freshman (2 upper level classes, A and B, out of 6 classes); the subjects are 80 students.

24 class periods out of the total 28 class periods a year and the self-study hours.

Experiment duration : 2 full semesters; May in 1998 to January in 1999.

Teaching material

A networking type of *BBC New English Course* (produced by ALPS System Integration Company, in Japan)

Method for the experiment

1. In the pre-test, a close type of dictation test was used for examining the students' ability of English. Pre-questionnaire about the students' interest in the CALL materials and computer utilization was given.
2. Suggestions of learning English were made to students on the basis of one unit per 2 weeks by making the syllabus appropriate. 4 kinds of the learners' learning records were accumulated as data bases: time spent for learning, frequency of learning, frequency of pronunciation practice, frequency of dictation practice.
3. Post-test for measuring the students' English ability with the same content as that of the pre-test and the post-questionnaire about the student's consciousness of the CALL materials and computer utilization were given to the students.

Method of analysis

Descriptive statistics of basic data

Test data: To check whether the students have increased the test score by making use of the CALL material, by measuring the basic statistical data of the pre- and post-tests. A test of significance by a t-test given to each of the four experimental classes about the difference between the means of pre-test and post-test was executed.

Learning records data: To analyze the basic statistics pertaining to the data of learning history, such as the time and frequency used for learning, frequency of pronunciation practice, and frequency of dictation practice based on the learning data basis.

Questionnaire data: To analyze the basic statistics pertaining to the data of Pre- and Post-Questionnaire. A test of equality by chi-square test was give to each item.

Multivariate analysis of basic data

Correlation analysis between test data and learning records data: To analyze the correlation between the test scores and the data of learning records, using multiple regression analysis and Pearson's correlation coefficients.

Correlation analysis between test data and questionnaire data: To analyze the correlation between the test scores and the data of pre- and post-questionnaire, using Hayashi's Quantification Method Type I.

Correlation analysis between learning records data and questionnaire data: To analyze the correlation between the learning records data and the data of pre- and post-questionnaire, using Hayashi's Quantification Method Type I.

Data analyses were performed by using two kinds of software: SPSS 8.0 J for windows Base System and Quantification Programs 32 Bit SPSS for windows.

Results and Discussion

Analysis 1: The Test of Significance Referring to the Difference Between the Means of the Pre- and Post-Tests

Table 1. The Means of Pre-test / Post-test / Difference

Class	Pre-Test				Post-Test				t	df	p
	mean	S.D.	max.	min.	mean	S.D.	max.	min.			
A (n = 36)	34.47	5.63	44	22	38.72	4.58	46	24	6.56	35	***
B (n = 33)	29.78	5.71	42	15	36.33	4.72	45	27	6.54	32	***
Total (n = 69)	32.23	6.10	44	15	37.57	4.77	46	24	5.34	68	***

Class	Difference			
	mean	S.D.	max.	min.
A (n = 36)	4.25	3.88	13	-3
B (n = 33)	6.84	4.08	24	0
Total (n = 69)	5.49	4.77	24	-3

*** p < 0.01

In order to examine whether each of the class A and B had increased their test scores, due to the use of CALL material, BBC New English Course, we made the test of significance referring to the differences between the means of the pre-test and post-test in each class. Table 1. indicates that the students showed improved test scores in the post-test, and that after performing the test of significance for the difference between the means of the pre-test and post-test, the result was significant by the level of significance of 1%. Moreover, comparing the difference between the means of the pre-test and post-test in each class, no meaningful significance was found. This means that by using a CALL material, the degrees of increase of the learning effect was similar in every class of different level.

Analysis 2: Descriptive Statistics of Data of Learning Process

Table 2 shows the students' time spent for learning, frequency of learning, frequency of pronunciation drill, and frequency of dictation practice on each class, and on total classes. All students practiced 11.47 hours during 24 weeks, i.e. an average of 29 minutes a week, and the students also practiced the pronunciation drill 496 times in 24 weeks, i.e. 20.6 times a week. The students practiced 20-25 minutes in the regular classes and 4-9 minutes in their self-study hours. According to the questionnaire, we could say that the students were active and positive to study English using the multimedia type of CALL material. However, they actually could not have much time for self-study because CALL laboratories were always occupied by other classes in addition to English classes.

Table 2. Descriptive Statistics of Data of Learning Process on *BBC New English Course*

Class	time spent for learning (hours)				frequency of learning			
	mean	S.D.	max.	min.	mean	S.D.	max.	min.
A (n = 36)	11.07	3.65	19.7	4.4	64.36	27.42	146	29
B (n = 33)	12.47	4.75	24.7	7.1	88.45	60.75	314	37
Total (n = 69)	11.74	4.24	24.7	4.4	75.88	47.65	314	29

Class	frequency of pronunciation practice				frequency of dictation practice			
	mean	S.D.	max.	min.	mean	S.D.	max.	min.
A (n = 36)	529	269	1424	23	444	253	1010	37
B (n = 33)	460	296	1112	25	493	272	969	25
Total (n = 69)	496	282	1424	23	467	262	1010	25

Analysis 3: Correlation Analysis of the Test Score and the Data of Learning Process

Table 3 indicates that the correlation coefficients between the difference of pre-test and post-test and the frequency of learning are only significant in total. This means that high frequency of accessing the material for learning caused a elevated score in the post-test. In B class, the correlation coefficients between the post-test and the time spent for learning, and frequency of learning are significant. On the contrary, in A class, there are no significant correlation coefficients in any part.

Table 3. Correlation Analysis of the Test Score and the Data of Learning Process

class	time spent for learning			frequency of learning		
	pre-test	post-test	difference	pre-test	post-test	difference
A (n = 36)	0.101	0.117	-0.009	0.169	0.086	-0.144
B (n = 33)	0.331*	0.335**	-0.076	-0.17	0.37**	0.304*
C (n = 69)	0.141	0.183	-0.002	-0.062	0.18	0.238**

class	frequency of pronunciation practice			frequency of dictation practice		
	pre-test	post-test	difference	pre-test	post-test	difference
A (n = 36)	-0.09	0.025	0.161	0.246	0.26	-0.05
B (n = 33)	0.37**	0.212	-0.123	0.18	0.118	-0.099
C (n = 69)	0.178	0.147	-0.038	0.159	0.158	-0.048

** p<0.05, * p<0.1

Actually, students of each class made the increase of test scores by using the CALL material. And the learning effect was significant similarly in each class as shown Table 1. However, the correlation coefficients between the post-test and the frequencies of pronunciation practice and dictation practice were not significant. Thus, we cannot confirm which learning processes directly produce the learning effect. The question now arises: are there any other factors such as psychological or mental factors that influence the increase of learning effect? If so, is it possible that we reveal quantitatively such psychological or mental factors? Therefore, as the next stage, we examined the psychological characteristics of students based on the questionnaire asking students' preference and orientation about computer, English, CALL lab, CALL material, and so on.

Analysis 4: Analysis of the Frequency of the Students' Response to the Pre- /Post-Questionnaires

Table 4. The Frequency of Students' Responses to the Pre/Post-Questionnaire

Key to Questions:	
(BQ1 /AQ1)	Do you like to operate the computer?
(BQ2 /AQ2)	Do you like to study English?
(BQ3 /AQ3)	Is the English course using the CALL lab more interesting to you than the other English courses?
(BQ4 /AQ4)	Is the <i>BBC New English Course</i> , a CALL material interesting to you?
(BQ5 /AQ5)	Are / Were you positive and active in learning the BBC, a CALL material ?
(BQ6 /AQ6)	Do/Did you think of the English course using the BBC, a CALL material as more effective in English learning?
(BQ7 /AQ7)	Do / Did you have enough time for self-studying the BBC, in addition to class period ?
BQ=Pre-questionnaire AQ=Post-questionnaire	

Table 4. The Frequency of Students' Responses to the Pre/Post-Questionnaire (Cont'd)

Pre-Questionnaire	BQ1	BQ2	BQ3	BQ4	BQ5	BQ6	BQ7
Yes	53	41	52	55	51	47	10
No	3	5	2	2	1	0	32
Neither	13	23	15	12	17	22	27

n = 69

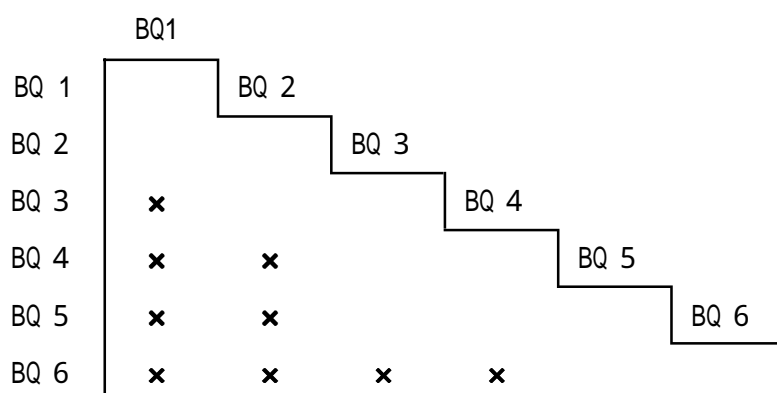
Post-Questionnaire	AQ1	AQ2	AQ3	AQ4	AQ5	AQ6	AQ7
Yes	52	36	49	51	27	43	4
No	3	3	4	4	7	8	52
Neither	14	30	16	14	35	18	13

n = 69

In Table 4, pre- and post-questionnaires consist of 7 items: preference for operating computer, preference for studying English, interest in CALL lab, interest in a CALL material, positive attitude to study a CALL material, expectation to the learning effect by using a CALL material, and self-study hours for a CALL material. The middle part of this table indicates the students' responses to the pre-questionnaire given when a month has passed since the students studied English using the CALL material. The bottom part shows the students' response to the post-questionnaire given when they finished all the courses using the CALL material in ten months. Answers are 3 possibilities: yes, no, neither yes or no. There are no remarkable changes of proportion of the students' answers to each 7 question between pre- and post- questionnaire.

Analysis 5: Equivalence Test of Items of Pre-Questionnaire

Table 5. Equivalence test of Items of Pre-Questionnaire



n = 69

= relational p < 0.05

= weakly relational p = 0.10

x = not relational p > 0.05

Based on the results of pre-questionnaire in Table 4, cross tabulation and equivalence test by using chi-square test were performed to each item of pre-questionnaire. In Table 5, \sim means that the items are relational, \sim means that the items are weakly relational, and \times is that the items are not relational. This table enables us to find what preference and orientation the students have when they start studying the CALL material. First, most students (53 out of 69) like to operate computer, than to study English (41 out of 69). We may say that students are computer-oriented people just in the present IT period. Second, preference for computer and preference for English are weakly relational ($BQ1 \times BQ2 = \sim$), that means students who like studying English also like operating computer. And also, students who like studying English are interested in CALL lab ($BQ2 \times BQ3 = \sim$). Third, regardless of preference for computer, or preference for English, the following 4 characteristics are found as relational. Students who are interested in CALL lab are also interested in BBC, CALL material ($BQ3 \times BQ4 = \sim$), and also they are positive and active in learning BBC ($BQ3 \times BQ5 = \sim$). Then, the students who are interested in BBC are also positive and active in learning BBC ($BQ4 \times BQ5 = \sim$). And, the students who are positive and active in learning BBC also think of learning BBC as more effective in English learning ($BQ5 \times BQ6 = \sim$).

Judging the results as a whole, we could say that, regardless of likes and dislikes for English, the students' interests in computer, CALL lab, and CALL material, and their positive attitude to studying CALL material are the influential factors to the increase of the learning effect, i.e. the increase of the test scores. To clarify such influential factors, correlation between the increase of test scores and psychological factors, and correlation between the learning process and psychological factors were analyzed as in the following sections.

Analysis 6: Correlation Analysis Between Test Data and Questionnaire Data

Table 6. Correlation Analysis of Pre-test vs. Pre-questionnaire and Post-test vs. Post-Questionnaire

Pre				Post			
Variable	partial correlation coefficient			Variable	partial correlation coefficient		
	A (n = 36)	B (n = 33)	TOT(n = 66)		A (n = 36)	B (n = 33)	TOT (n = 66)
BQ1	0.21	0.36	0.06	AQ1	0.07	0.22	0.12
BQ2	0.18	0.23	0.29	AQ2	0.24	0.38	0.15
BQ3	0.39	0.04	0.08	AQ3	0.20	0.56	0.32
BQ4	0.31	-0.01	0.18	AQ4	0.20	0.58	0.29
BQ5	0.55	0.01	0.34	AQ5	0.23	0.51	0.21
BQ6	0.08	-0.01	0.12	AQ6	0.07	0.18	0.01
BQ7	0.51	-0.08	0.28	AQ7	0.07	0.60	0.27
m. c.	0.62	0.63	0.53	m. c.	0.42	0.78	0.48

m. c. = multiple correlation

To examine which psychological factors cause the increase of test scores, correlation analysis between pre-test and pre-questionnaire, and post-test and post-questionnaire were performed by using Hayashi's Quantification Method Type I. In Table 6, the left table shows the result of pre-test and questionnaire. The right table shows the result of post-test and questionnaire. In these tables, the variable is the item of each questionnaire. For example, in the left table, we set the scores of pre-test as objective variable, and the items of pre-questionnaire as explanatory variable, and partial correlation coefficients are shown in each class and in total. Taking an example, we can find that explanatory variable BQ1 (preference for computer) have influence on the score of pre-test, and its degree is 0.21.

As a result of examining the right part of the Table 6, it is clear that the most influential factor on the post-test is BQ3 (0.32), i.e. interest in the English course using the CALL lab; and the secondary influential factor is BQ4 (0.24), i.e. interest in the BBC, a CALL material itself. When the post-test was done in January, 1999, students had studied the BBC in the CALL lab for about 10 months. The interest in CALL lab and CALL material stimulated the learners' motivation of learning. And, while actually they had studied in such a condition, their interest in CALL lab and CALL material were kept, and that influenced the elevated scores of the post-test. This result seems to be meaningful. In addition, what is more noticeable here is that such result is clearly found in B class. BQ3 (0.56) and BQ4 (0.58) are most influential factors on the post-test. Students in B class are in the secondary level of proficiency in English ability. To learners who are computer-oriented, but are not good at English, English learning in CALL lab using a CALL material caused the elevated scores of the post-test. In fact, it is a serious problem to us how to manage the class of poor proficiency students. As one answer to this problem, we can safely state that learning English interactively by means of the computer in CALL lab is effective as one of the new type of TEFL methods.

Analysis 7: Correlation Analysis Between Learning Records Data and Questionnaire Data

Table 7. Correlation Analysis of Learning Process and Post-Questionnaire

Time spent for Learning				Frequency of Learning			
Variable	partial correlation coefficient			Variable	partial correlation coefficient		
	A (n = 36)	B (n = 33)	TOT		A (n = 36)	B (n = 33)	TOT
AQ1	0.04	0.32	0.25	AQ1	0.21	0.33	0.28
AQ2	0.33	0.15	0.23	AQ2	0.19	0.42	0.3
AQ3	0.18	0.37	0.12	AQ3	0.09	0.42	0.13
AQ4	0.64	0.29	0.33	AQ4	0.39	0.3	0.07
AQ5	0.07	0.03	0.05	AQ5	0.34	0.26	0.06
AQ6	0.29	0.27	0.19	AQ6	0.16	0.33	0.06
AQ7	0.14	0.49	0.25	AQ7	0.08	0.59	0.34
m. c.	0.69	0.59	0.51	m. c.	0.51	0.73	0.48

m. c. = multiple correlation

Frequency of Pronunciation Practice				Frequency of Dictation Practice			
Variable	partial correlation coefficient			Variable	partial correlation coefficient		
	A (n = 36)	B (n = 33)	TOT		A (n = 36)	B (n = 33)	TOT
AQ1	0.28	0.36	0.06	AQ1	0.12	0.31	0.18
AQ2	0.57	0.37	0.25	AQ2	0.21	0.41	0.23
AQ3	0.35	0.49	0.19	AQ3	0.24	0.39	0.18
AQ4	0.24	0.54	0.27	AQ4	0.50	0.51	0.47
AQ5	0.36	0.36	0.25	AQ5	0.31	0.17	0.15
AQ6	0.42	0.54	0.23	AQ6	0.11	0.35	0.14
AQ7	0.36	0.34	0.16	AQ7	0.02	0.31	0.11
m. c.	0.69	0.77	0.52	m. c.	0.55	0.66	0.53

Our final analysis was to examine which psychological factors had some influence on the learning process. That is, what consciousness do the learners have when they practice the BBC in CALL lab. Correlation analysis between learning process and post-questionnaire was performed by using Hayashi's Quantification Method Type I. In Table 7, partial correlation coefficients are shown in each class and in total, in every 4 kinds of learning processes.

As a result of examining partial correlation coefficients in total of all tables, we can notice that the factor of interest in CALL material :AQ4 is the most influential factor on the three kinds of processes: on time for learning (0.33), on pronunciation practice (0.27), and dictation practice (0.47). It seems reasonable to suppose that once the learners come to have an interest in a CALL material, they come to take much more time in learning, and to practice more in pronunciation and dictation. That is, the interest in a CALL material made the learners spend much time for learning, and stimulated them to practice pronunciation and dictation as much as possible. Then, that effort caused the elevation of the test scores in post-test.

Concerning B class, the secondary level of proficiency group, the factor AQ7, having enough time for self-study, is the most influential factor on the time spent for leaning (0.49) and frequency for learning (0.59). And, the secondary influential factor on time and frequency is AQ3, interest in CALL lab (0.37) and (0.42). In addition, as shown in Table 3 on B class, there was a significant correlation between time for leaning and post-test, and frequency of learning and post-test. This means that if B class students have enough time for self-study in school, and they are interested in CALL lab, they take much time and more frequency for learning the BBC. And such learning process resulted in the significant elevated scores in post-test.

Moreover, concerning B class, what is remarkable here is that the most influential factor on the frequency of pronunciation (0.54) and on the frequency of dictation (0.51) is AQ4: the interest in the BBC, a CALL material. This is the same tendency as found in total. This result reveals the characteristics of the learners of poor proficiency in English ability. To the learners who are not good at English, but are computer-oriented, English learning using a CALL material is quite interesting to them, and such interest in a CALL material stimulated their motivation to practice pronunciation and dictation interactively with computer. Actually, the learners can record their pronunciation through head phones, and their sound waves appear on the monitor just in front of them, and they can compare their own sound waves with the model simultaneously on the monitor. And also, once they directly type in words, phrases, and sentences, correction program automatically can check their spelling. Such interactive learning lessons stimulated their motivation to practice actively more and more. As a result, we can safely state that the interest to the interactive learning with sounds, letters, pictures, that is, the characteristics of multimedia, is the motivation for the learners of poor proficiency in English. This supports that CALL system, i.e. multimedia type of teaching material and CALL lab is effective when promoting TEFL methods.

Conclusion

The present study made it a point to examine whether or not a multimedia type of CALL material and the teaching/learning method supported by computer facilities were effective. Many experiments about a multimedia type of teaching/ learning methods were based on questionnaires, or questionnaires and test data. The method of measurement and verification in the present study was an integrated one, consisting of three kinds of data: the pre- and post-test data, the objective data of the students' learning records, and the subjective questionnaire about the students' consciousness. And the method of analysis was precise one, making use of Hayashi's Quantification Theory as is commonly used in the areas of sociology or psychology and so on. As a result of performing the integrated correlation analyses, it seems reasonable to suppose that three assumptions of ours were verified. It is also entirely fair to conclude that a CALL system is fairly effective when promoting TEFL methods.

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How Far is Language Learning by CALL from First Language Acquisition?

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Abstract

The purpose of this presentation is to consider if language learning by CALL is effective in comparison with the process of first language acquisition. The CALL system has been widely used in the educational scene of Japan, replacing the traditional LL system with the new one. Has technical progress or change in the media of this kind altered language learning in itself? The question concerned does not seem to have been extensively discussed yet. The author will introduce in the presentation the models, which are supposed to explain explicitly the difference in the processes of first language acquisition and language learning by CALL.

Introduction

People naturally master a language from their direct experiences, exchanging information in a particular environment exposed to them. On the other hand, language learning takes place through the effective use of simulation done by application software so far as CALL is concerned. The environment that people are immersed in seems to have something to do with the quality and quantity of experiences and their effects on memory. The author will examine which factors influence first language acquisition and language learning by CALL respectively.

First Language Acquisition

First we will consider the significant factors related to first language acquisition. When examining them, you need to keep two things in mind, that is, how linguistic elements are processed and how they are stored in memory. The author will consider them from neuropsycholinguistic point of view.

Independent Processing of Semantic and Linguistic Information

Some studies of aphasia have shown that spoken language processing works mainly in and around Broca's and Wernicke's areas. In the former speech is programmed and in the latter it is decoded. Damasio(1992) has also proved that linguistic information and semantic information is processed individually though we actually integrate them automatically and instantaneously in the process of production. From what we have described so far, there is no doubt that the process of mastering a language occurs inside the brain. What is happening in the brain, then? Ikari(1999) has illustrated in Figure 1 the process of first language acquisition from the viewpoint of neuropsycholinguistics.

Figure 1 shows how auditory or visual information is being processed in some particular areas of the brain. The figure could explain fairly well how people cope with the word *fish* auditorily, comprehending its meaning or how they deal with the fish visually, producing the combination of sounds correspondingly. As has been mentioned above, this figure also suggests that semantic information is processed independently of linguistic information.

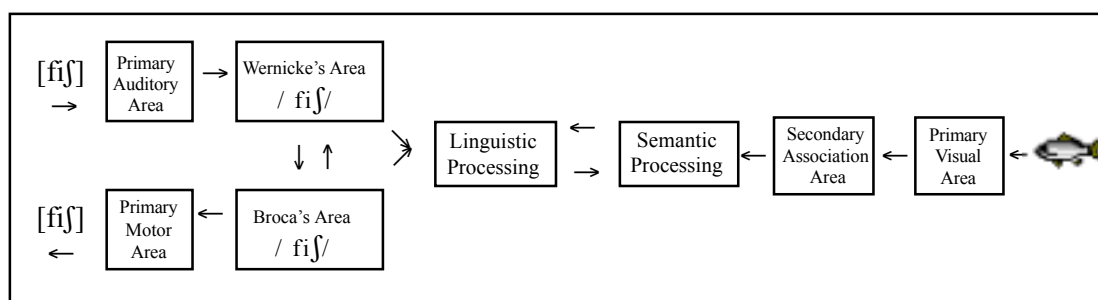


Figure 1. Brain function and language processing

The Role of Memory

In addition to the independent processing of linguistic and semantic information, memory function should be taken into consideration in order to explain how the inner system shown in Figure 1 works well. Considering the independent processing of semantic and linguistic information examined above, Ikari(1998) has proposed in Figure 2 the model illustrating how some special organs are related to the overall language processing from the view point of memory function.

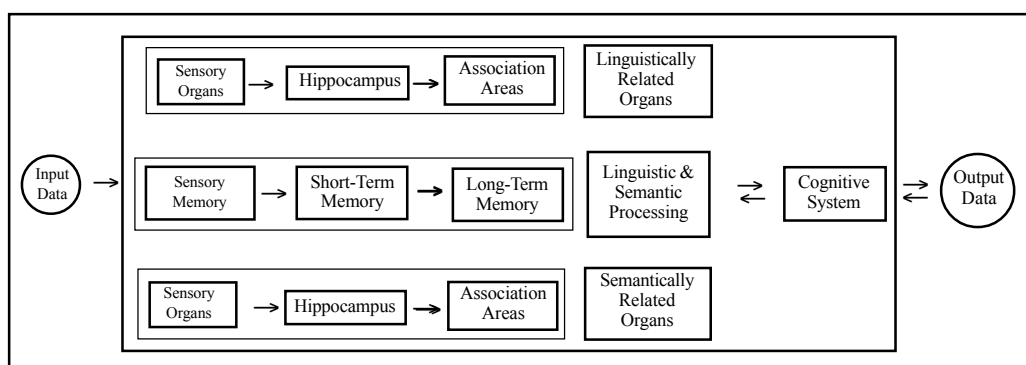


Figure 2. Relation between memory and language processing

Figure 2 shows that linguistic and semantic information is processed at the same time and it is also done individually in some particular areas or organs. Furthermore you should be careful that the organs related to linguistic processing are restricted to ears and eyes so far as the availability of sensory devices is concerned. On the other hand the ones involving semantic processing can be a nose, a tongue, hands and some other sensors, including the above two. This could imply that with linguistic or semantic information processing memory functions in a different manner, activating some organs specialized in each processing.

Mechanism of Language Acquisition

It follows from what we have considered that concerning first language acquisition linguistic and semantic information is treated separately in language processing and that memory function is closely related to each processing. Ikari(1999) has introduced in Figure 3 the model of the mechanism of language acquisition to explain the whole processes concerned.

Figure 3 includes a couple of new elements such as Analytic Procedure and Pattern Recognition. Yet we will not discuss them here in the presentation because of its complexity. Anyway, with this figure you will see how linguistic and semantic information are processed in combination with memory functions. Let us reconfirm here again that spoken language are treated separately in the process of linguistic and semantic information and this works in relation to memory functions involved.

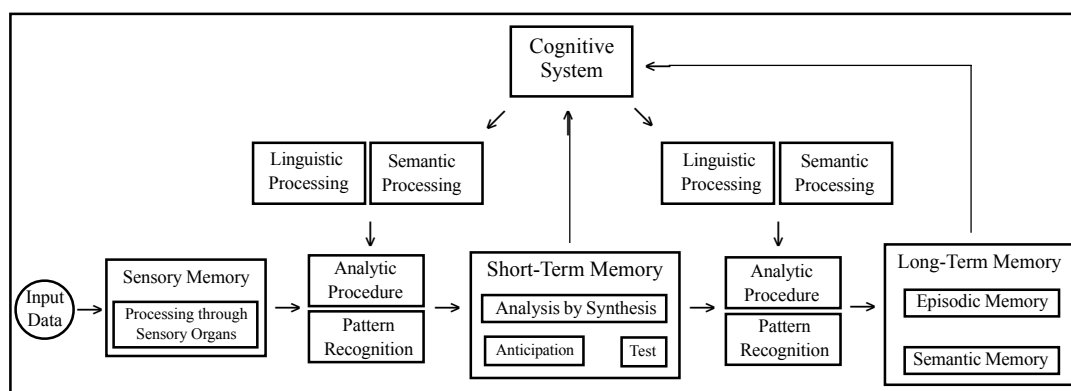


Figure 3. A model of the mechanism of language acquisition

Language Learning by CALL

We have observed thus far some significant factors connected with the process of first language acquisition. Here we will consider some other important ones that might have a considerable influence on language learning by CALL.

Five Senses and Language Learning

When looking at the process of language learning from the neuropsycholinguistic point of view, you will see that language learners only activate the visual and auditory information in a restrictive way through CALL, while in natural contexts they can make effective use of some other information, activating five senses. From the viewpoint of five-sense activation we will illustrate how people approach to meaning in Figure 4 and Figure 5.

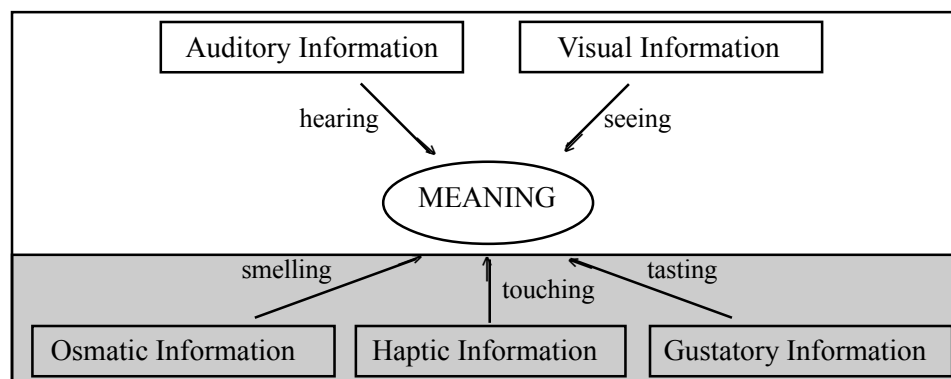


Figure 4. Approaches to meaning through CALL

As Figure 4 shows, learners can only access to auditory and visual information in the CALL environment due to the limitation of its own system available. In contrast people can use any of five senses in language acquisition, which is shown in Figure 5 and it is probable that activation of five senses makes it far easier to restore information for language use by the effective use of neural networks.

The difference in the approach to meaning shown in Figure 4 and Figure 5 makes the mastery of a language fundamentally distinct in nature between first language acquisition and language learning by CALL. Language learning by CALL is surely effective in that it could possibly lead the learner to be strongly motivated to master the target language through interaction of information with electric devices such as personal computers linked to the Internet. As far as the structure or the grammar of a language is concerned, this learning style seems to be efficient

because of its nature of abstractness. Yet as to the mastery of the meaning of a language what they have learned through CALL does not seem to be a real language or a living language. It is something like a pseudo system of language.

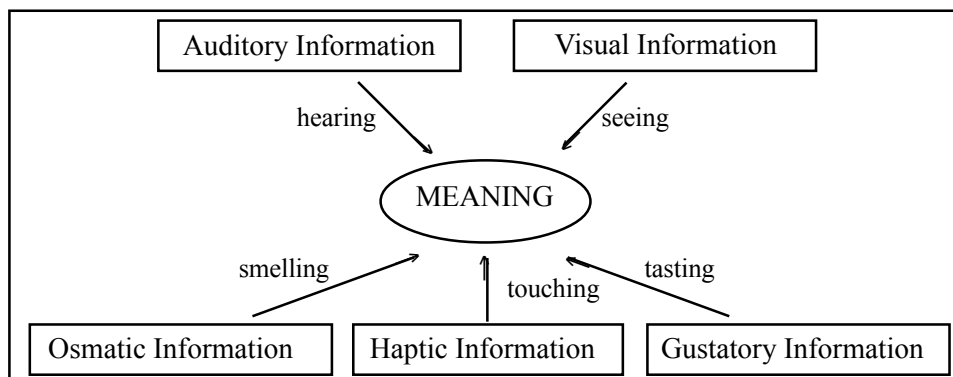


Figure 5. Approaches to meaning in language acquisition

Figure 5 shows that in language acquisition people can activate some or all of five senses to access the meaning and through this they can restore some particular information in memory more strongly with the number of approaches available. Not only the number of approaches but their qualities are significant. The qualities could be profoundly influenced by direct experiences.

Experiences and Language Learning

As has just been mentioned above, people cannot learn fully the meanings of a language by CALL because of its shortage of direct experience. Using computers to access only fairly abstract level of auditory and visual information is not enough. This relationship is illustrated in Figure 6.

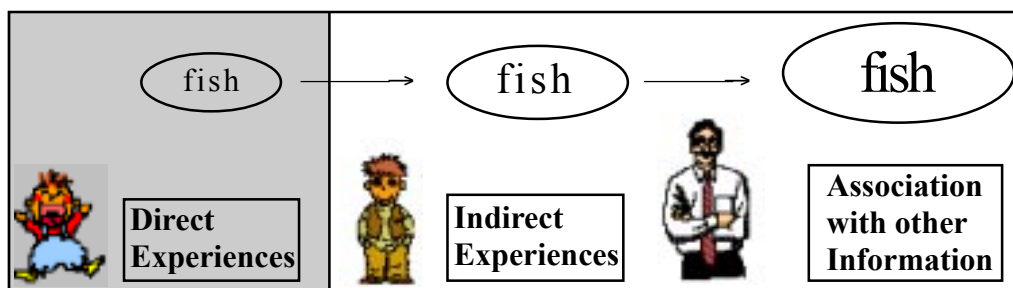


Figure 6. Learning of meaning through CALL

The fact that CALL learners are lacking in direct experiences might have a deep influence on the acquisition of meaning. What would happen to them if they could not make use of direct experiences? They could understand the meaning of a word abstractly but not concretely. That means language does not work properly or is not fully activated in the neural network of the brain. In order to work it they must learn from direct experiences.

Figure 7 does not just suggest that as people grow older, they can grasp the total meaning of a word but implies that they can access the meaning freely with what they have ever acquired. In our assumption direct experiences would form the basic backbone of memory for language use. It follows from this that we should keep two points in mind. One is that direct experiences might make it possible to retain more useful information for language use than indirect experiences alone. The other is that direct experiences could lead you to make use of more networks to access the meaning.

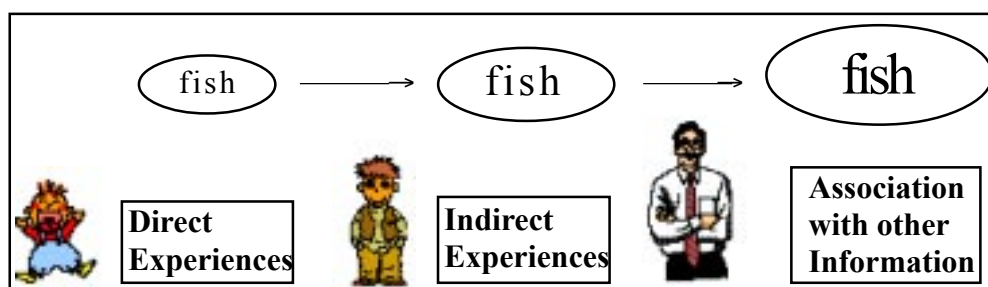


Figure 7. Acquisition of meaning

Different Models of Language Processing

Finally, the models will be designed on the basis of what we have observed thus far from a neuropsycholinguistic point of view. Our observation is that language learning by CALL is effective from the viewpoint of the mastery of the linguistic form, but at the same time does not put you in a real state of a particular language so far as the linguistic meaning is concerned.

A Model for First Language Acquisition

In the process of first language acquisition people master their language developmentally through direct and indirect experiences. In processing semantic information, they can access the data based on both experiences, which is shown in Figure 8.

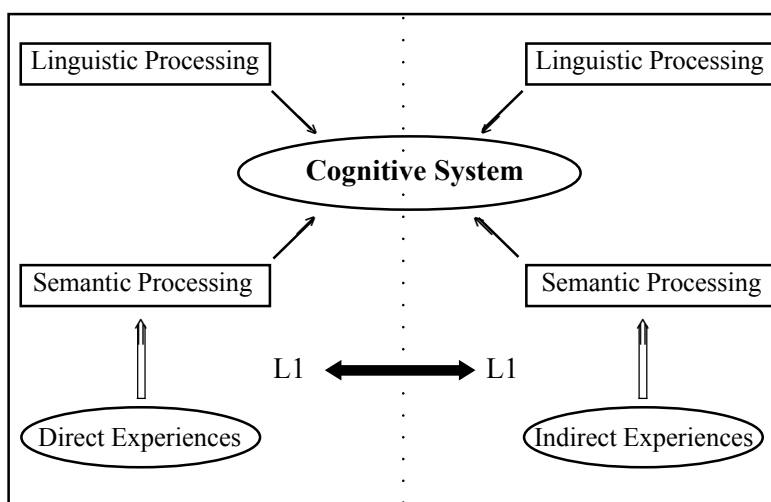


Figure 8. Language process in first language acquisition

As Figure 8 shows, people can use effectively the semantic data based on both direct and indirect experiences. That is the way language works quite well.

A Model for Language Learning by CALL

When learning a language with the CALL system, you usually use a PC that provides you with a feasible environment to some extent. The environment you are actually involved in is a real one in the way that you are learning in an actual CALL room. Yet from what we have considered learning by CALL can only take place by use of computer software. This style of learning is therefore considered to be based on virtual reality, or indirect experiences. People learn a language by CALL through indirect experiences alone, which is shown in Figure 9.

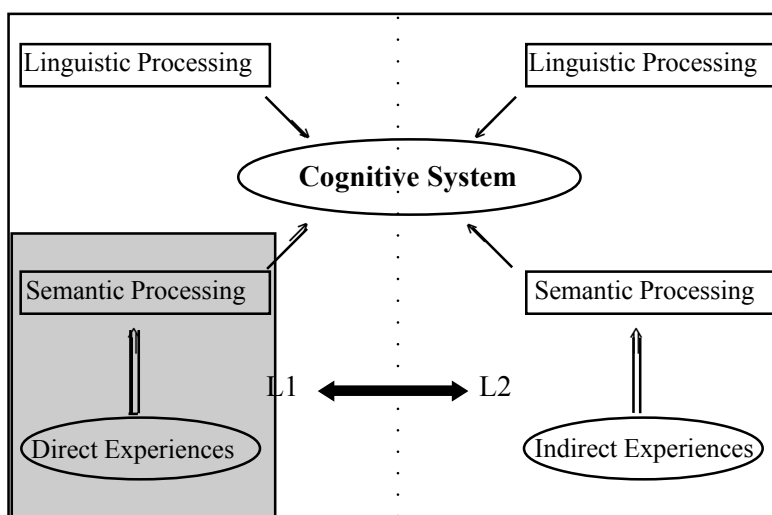


Figure 9. Language process in CALL learning

This figure shows that learners can access semantic data coming from indirect experiences but not direct ones. This result might force them to use alternative semantic data based on their first language since it is deeply rooted in direct experiences, which is shown in small dots. It would lead us to suppose that the language learned by CALL could not work fully just like mother tongue.

Conclusion

In the presentation we have observed that language learning by CALL might be effective in some ways but from the viewpoint of first language acquisition it is not always true. The fact that learners are lacking in direct experiences, in other words, that they are learning a target language in a virtual reality will make it hard for them to master a real language. Our conclusion of this presentation is that there seems to be no other way but to leave learners immersed in real situations for some time in order that they could master the target language in a proper way by the active use of five senses.

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How to Use PowerPoint

This article is primarily in Japanese and therefore not all of it may be readable without the Japanese version of Acrobat.

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Abstract

Microsoft PowerPoint 2000 is a presentation graphics program designed to help you produce screen displays, photographic slides, transparencies, and handouts useful in lectures, seminars, etc. In this introduction session, we will walk you through creating a new presentation file and editing slides. It will focus on three areas: (a) Creating and displaying a new file, (b) Editing text on slides and (c) Editing graphics on slides. Text editing in PowerPoint is similar to text editing in other application programs, and the controls (buttons, dialog boxes and menus) that PowerPoint displays for text editing are fairly standard.

はじめに

近年の急速なコンピュータの普及により、企業はもとより学校においても一人一台は周知のこととしてとらえられてる。それに伴いコンピュータや情報教育に関連する教育も、ハードウェアの知識やソフトウェアの利活用スキルを重視する時代から、問題解決、計画、表現の手段としての分析、統合、創作、表現の能力を重視するようになってきた（岡本、2000）。このような状況のもとで、教師自身においても決められた時間内で、印象深く、説得力のある表現法を身に付け、教育や研究発表の場で実践できる能力を身に付ける必要がある。そこで、本稿では、はじめにプレゼンテーションの定義、目的、活用場面について述べ、次に代表的なプレゼンテーションソフトであるPowerPoint 2000（以下、PowerPoint）を用いて、ビジュアル化に焦点をあてたデジタルプレゼンテーションの作成方法を紹介し、最後にプレゼンテーション本番での注意事項について解説する。

プレゼンテーションについて

定義

プレゼンテーションとは、話し手が限られた時間で情報を分かりやすく正確に聞き手に伝えることをいう。その時、聞き手は提示された内容について理解を深め、判断や意思決定を行い、話し手は自分の提案を受け入れてもらうために、聞き手と積極的なコミュニケーションを行う（永井、他 2000）。

目的

プレゼンテーションの目的は、自分の提案を聞き手に理解してもらうために、テキスト、表、グラフ、静止画、動画、音声などを使って視覚や聴覚にうったえて、注視させるように提示することである。

シナリオ

説得力のあるプレゼンテーションを作成するにはシナリオが重要である。提示したい対象を詳細に分析して、提示する内容、順序、方法などを含んだシナリオに組み立て、必要な数のスライドに展開する。

このとき、プレゼンテーションを見る人の状況を考慮したシナリオに作り上げるのが重要なポイントである。その際、全体の説明から詳細な説明へと進むことが効果的である（高橋、他 2000）。

場面

プレゼンテーションの場面には、次のようなものがある。1) 会議の場面では、提案、報告、説明、発表を行う。2) イベントでは、講演、新製品発表会、各種見学会、コンペが行われる。3) 研究では、卒研、修論発表会、および研究発表、パネルディスカッション、シンポジウムがあげられる。4) 教育では、講義、課題研究の成果の発表に用いられる。

プレゼンテーションの構成

一般

一般的なプレゼンテーションは、通常、序論、本論、結論から構成されている。序論では、聞き手の動機付けを行うと同時に、何をどんな順序で提示するかを述べる。本論では、背景の提案と説明、データを示しながらの現状報告、問題点と解決策をそれぞれ示す。結論では、要約、ポイントの繰返しと強調、今後の予定を行う。

研究発表

研究発表などの改まった発表では、はじめににおいて、問題の所在、以前の研究、仮説を述べる。次に方法で、被験者、道具、手続きがそれぞれ説明される。さらに、結果と考察で判明事項をそれについての考察を示し、最後に結論を述べる。

プレゼンテーションの作成

視覚の刺激

プレゼンテーションは人間の五感にうったえるものであるから、その本質を理解した上で作成すればメッセージを的確に伝達できる。人間の五感の情報収集率は視覚(72%)、聴覚(13%)、味覚(6%)、嗅覚(6%)、触覚(3%)といわれており、さらに、伝達方法と記憶力の関係で、5日後の記憶量を測定したところ言葉のみ(聴覚)の場合10%、図表のみ(視覚)では20%、さらに言葉と図表(聴覚+視覚)では60%であった。その理由は、人間の感覚で最も発達しているのは「視覚」であり、視覚が刺激を受けると右脳が視覚刺激をイメージで捉え、その後左脳が判断し、言動として表現されるからである(白取、2000)。これらのことから、わかりやすい資料とは、数値データは表やグラフで視覚化し、文字は聴衆に読ませるのでなく見せ、必要最低限の情報量を備えたものである。

作成手順

最初の情報収集では、文献、データベース、インターネット、アンケート調査、実験などにデータを収集よりする。次の企画では、それらを分析、分類、整理してイメージをまとめあげ、さらにプランニングではテーマにそって情報を整理して組合せ、聞き手に合わせて内容をアレンジし、時間制限に合わせて内容を整理する。このようにして準備した内容を効果的に伝えるため、時間、空間、因果関係などにそってストーリーとしての筋書きを作る。最後に、これらをもとに序論、本論、結論の順にアウトラ

インを完成する。発表用資料としては、話し手側は提示用、手元用原稿を用意し、聞き手は配布資料を受け取る。

発表手順

発表は、序論、本論、結論、要約、質疑応答の順に行い、重要度の高いものに時間配分を多くする。通常 1 スライドの所要時間は 1 分前後が適切であろう。

デジタルプレゼンテーション

メリット

プレゼンテーションを効率的に準備、作成、発表するためには、デジタルメディアを活用することが有効であると考えられる。その理由として、デジタルプレゼンテーションの次のようなメリットがあげられる（白取、2000）。

- | | |
|----------|---------------------------|
| 1. 構成 | テンプレートにより作成時間が短縮される |
| 2. 文字入力 | 所定の枠内で自動的に書式が設定される |
| 3. 図解 | 描画ツールにより簡単に図が作成できる |
| 4. 配色 | 色彩の専門家が設定したものが使用できる |
| 5. レイアウト | 既成パターンから選択できる |
| 6. 特殊効果 | 五感へのインパクトが得られる |
| 7. 配布資料 | 用途別にさまざまな印刷方法が選択できる |
| 8. リハーサル | 発表所要時間の記録が可能である |
| 9. 本番 | クリックによるか、自動実行にするかの設定できる |
| 10. 管理 | デジタルメディアであるため随時変更修正が可能である |

作成ステップ

次の順序で作成する：

1. パワーポイントの起動
2. 原稿ありの場合、「新しいプレゼンテーション」を選択
3. 原稿なしの場合、「インスタントウィザード」を選択
4. デザインテンプレートの適用
5. 箇条書きで文字入力し、レベルの上げ下げや文字サイズの調整を行う
6. 必要に応じて図解を挿入
7. 必要に応じてグラフを挿入
8. 必要に応じてクリップアートなどからイラストを挿入
9. 必要に応じて画面切り替え効果を設定する
10. 必要に応じてアニメーションを設定する
11. 配布資料の印刷

ビジュアル化（図解）

1. 配置

説得力のあるプレゼンテーションを行うには、効果的な視覚効果を行う必要があるが、特に、提示画面上での文字や視覚情報の配置は重要である。通常、画面上での人間の視線は、左から右へ 上から下へ 時計回り 中心から外へと順次流れていくため、情報の重要度に応じてこれらの位置に適宜配置する必要がある。

2. 方法

箇条書きや論理図解では、多くの情報の中から取捨選択してその内容が一目でわかるような文字情報を提示するが、その代表的な方法にKJ法がある。これはアイデアを思いつくまま書き出し、類似内容をまとめ、グループ化して見出しをつけていくものである（川喜田二郎、1967、1970）。

3. 図解の種類

PowerPoint では、箇条書き、論理図解、グラフ、表、物理図解、イラストのテンプレートが用意されている。これらは元データの種類により3つに分類される。文章の場合は箇条書きと論理図解、数値はグラフと表、物体は物理図解である。以下、それらについて解説する。

1. 箇条書き

スライド画面と連動したアウトライン機能を使えば、全体構成を一覧しながらレベル上げ、レベル下げ、行間設定、レベル移動を駆使して、メモ書き感覚で箇条書きによるプレゼンテーションの作成ができる。文字サイズは最小28ポイント、書体はゴシックか明朝、行数は5から7行、文字数は10から20字が適切である。

2. 論理図解

用途に応じて3種類の方法がある。構造・構成概念では分類図、組織図、構成図が、集合・関係概念ではチャート、グループ図が、流れを示す概念ではプロセス図、工程表がそれぞれ用いられる。その際、重要なものは画面中央に示すこと、まとめは太い線で囲むこと、的確な見出しを命名すること、バランスよく配置すること、矢印には意味を書くこと、図形サイズの統一によりリズム感を持たせることにそれぞれ配慮しなければならない。

3. グラフ

細かい数値よりも差の比較にポイントを置く場合に威力を発揮する。グラフは大きく分けて4つの種類がある。比率を表すには円、帯、層、ドーナツグラフ、格差には棒、積上げ棒、複合棒グラフ、推移には折れ線、近似曲線、層、複合グラフ、分布・相関にはレーダーチャート、散布図、バブルチャートがそれぞれ用いられる。その際、折れ線グラフの線は濃い色で示し、データラベルは必要最低限にする配慮が求められる。

4. 表

行と列からなり、数値をはっきり示したい場合に用いるが、細かい数字は見づらくなる難点がある。そのためスライドショーではグラフを提示し、配布資料に表を示すことが有効であろう。

5. 物理図解

実在するものを抽象化して示すもので、地図が代表的なものである。

6. イラスト

独自に描く方法もあるが、既に用意されているクリップアートを挿入するのが便利である。これは文字のみのスライドが続く場合、聴衆の注意をひきつけたり、和やかな雰囲気をかもし出す役目をはたす。また、コミュニケーション、ジェスチャー、シンボル、科学技術など、プレゼンテーションのトピックに対応した項目から選択することもできる・B

ビジュアル化（色彩）

色彩は配置と並んで色彩も重要なプレゼンテーションテクニックの一つである。ここでは5つの重要な概念を解説する。色相環は、人間の色覚の基本である赤、黄、緑、青の4グループの色が中心となっている色の環で、対角線同士が補色関係にあり、それらはお互いに際立たせる性質を持っている。トーンは人間に心理的效果をもたらすもので、暖色系は膨張色で目立ちやすく、楽しさや活動性を示し、寒色系は収縮色で目立ちにくく、信頼性や控えめな印象を与える。そのため内容にあわせてこれらを使い分ける必要がある。基調色は、プレゼンテーション全体のイメージを決定する重要な役割を持っており、主に背景色として用いられるが、淡緑や水色は爽快感を示し、肌色や桃色は温かみを表すとされている。これが決まれば、色相環での補色対比やトーンを利用した強調色でポイントとなる部分を強調することができる。グラデーションは、色相環、明度（明るさ）、彩度（鮮やかさ）により設定でき、図形に質感を持たせたり、矢印の視線誘導を用いると効果的である。

画面切り替え機能

スライド一覧表示モードのツールバーによりスライド画面の切り替え方法が設定できるが、通常は人間の視線に合わせて左からスライドインさせるのが自然である。オープニングとなるタイトルスライドはボックスワイプアウト、大きな展開ではチェッカーワイプ（横）、開始と終了には無地のスライドを挿入しておく効果的であるが、これら以外のスライドの方向は統一性を保つ必要がある。

アニメーション効果

箇条書きを示す場合、動きをつけると効果的なプレゼンテーションができるが、そのときもやはり視覚的に受け入れやすいものにする必要がある。通常はタイトル部分を遮らずに表示し、方向は左からが無難であるが、強調部分はワイプ（右へ）、列挙部分はスライドイン（左から）をそれぞれ使うと効果的である。また、文字の場合、インパクトを与えるためにはズームやスパイラルを、注目させたい場合はターンを、キーワードを示すときは一文字ずつ表示をそれぞれ使うと印象的である。さらに、線、矢印、円ではワイプを、四角形ではブラインドを使って描かれることが多い。

配布資料

配布資料については、スライドをそのまま印刷したものをを用いる場合と、アウトライン表示の形で用いる場合とがあるが、発表内容や聴衆に合わせて選択すればよいであろう。

プレゼンテーションの実施

このようにして作成したスライドショーが効果的に行われたかどうかは、次の項目についてチェックされて評価される。すなわち全体的な印象は良かったか、内容はうまく構成されていたか、間（ま）速度、語尾の正確さ、時間配分などの面からみて話し方は適切であったか、アイコンタクト、ジェスチャー、服装、熱意などの点から発表態度は良かったかの4点である。

おわりに

PowerPoint にはここでとりあげたもの以外に、音声や動画をスライドに挿入して、スライドショーの実行中に効果を出したり、プレゼンテーションにハイパーリンクを設定して、プレゼンテーションの中に含まれている目的別スライドショー、別のプレゼンテーション、Microsoft Word 文書、Microsoft Excel ワークシート、インターネットやイントラネット、あるいは電子メールアドレスなど、いろいろな場所に移動することができる。さらに、HTML 形式で保存してブラウザ上でスライドショーをおこなったり、Microsoft NetMeeting をインストールすることによりオンライン会議を開けば、時空を選ばず授業や研究発表のためのプレゼンテーションを行うことができる。

Microsoft, PowerPoint, Word, Excel, NetMeeting は、米国 Microsoft Corporation の米国およびその他の国における登録商標または商標である。

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The Importance of Learning Environment: A Case of an International Collaborative Project

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Abstract

This research analyzes the usefulness of growing international collaborative efforts among students and teachers to use TV-conferencing systems along with other multimedia for educational purposes. Real time international conferences, via a TV-conferencing system, between Japanese high school students and overseas students who are native speakers of English were held. A questionnaire was conducted after each session. The results of the data analysis are discussed here using a Vygotskian and sociocultural approach. It is proposed, from the viewpoint of Vygotskian theory and its expansion, that 1) actual activities, and 2) educational environment should be reframed. The analysis revealed the importance of a learning environment which enables learners to have voluntary and mutual interactions. It is concluded that third mediational tools, such as TV-conferencing systems, and computers, should be more actively utilized in L2 collaborative learning activities in order to promote learners' creativity and proficiency in the target language.

Introduction

This study analyzes an international collaborative work project and attempts to show how important it is for teachers and researchers of second languages to address the issue of learning environment. My thesis will be that we should focus on providing space to let learners have voluntary and mutual interactions with people in society to develop individual creativity or higher mental functions if we are to argue for a reframing of the L2 learning environment.

This research focuses on the growing development of international collaborative efforts among students and teachers to use video/TV-conferencing systems along with other multimedia for educational purposes. One particular on-going international collaborative project will be analyzed to show the significance of utilizing psychological tools in society to achieve the actual "Theory IN Practice" (TINP) activity. Psychological tools, with which learners mediate and express what they think in the context of cultural or social activities, now include multimedia, computers and the cyberspace.

Vygotskian Perspective

In an attempt to apply a certain theory organically in education practice, the perspectives of "theory in practice" represents the viewpoint that investigates reciprocally functioning relations of theory and practice as a whole unit. The notion of this perspective coincides with Vygotskian theory, which insists the reciprocal relations between subject, object, and the intermediate mediational part in environment.

According to Argyris and Schon (1974) and Sato, et al. (1998) the logical conclusion of "theory in practice" is as follows: A research object is a theory which functions within the actions of the teacher and the student, who are creating educational practice. There is no boundary between theory and practice. Every practice is regarded as theoretical practice and as a research object.

This perspective is differentiated from "theory into practice" and "theory through practice". Both of these perspectives are problematic when applied to education practice for the following reasons: "Theory into practice" admits superiority of theory over practice, and places practice at the bottom of the academic hierarchy. "Theory through practice" aims at structuring theory through the typicalization of one good practice, therefore, paradoxically restricting the teacher's action. These two perspectives regard theory and practice not as a whole unit but as two antagonistic elements.

At present, education practice seems to be heavily influenced by "theory into practice" and "theory through practice". The teacher's practice is controlled and restricted by external factors such as, one-way instruction, graded curriculum, classroom layouts with the blackboard in front and chairs and desks placed in one direction facing toward the blackboard, and educational material dominated by authorized textbooks. These outer elements regulate both the teacher and the student's action physically and metaphorically, therefore, it is essential to redesign this frame.

According to Vygotskian theory (Vygotsky 1978, 1987), the development of higher mental functions is deeply related with the environment, including the people and tools of a society. Language learning is included within the sphere of higher mental functions. The proper learning environment is a place where learners are able to work together with peers and people who maintain the community to which they belong. And the learners also should be provided with sufficient opportunities to utilize the psychological tools in order to have reciprocal interactions with peers and people in society so they can develop higher mental functions.

From the viewpoint of Vygotskian theory and its expansion, I propose that both 1) actual activities, and 2) educational environment should be reframed. Now is the time to argue whether multimedia in a learning environment is meaningful. This research thus argues for the feasibility of the theory and the plausibility of the practice in L2 learning environment via multimedia in an international collaborative work.

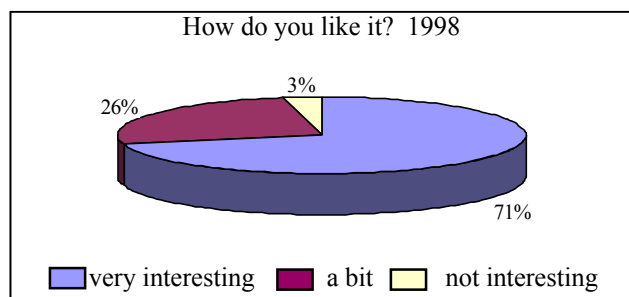
Method

The following procedures were employed in this study. (a) Real time international conferences between Japanese high school students and overseas students who are native speakers of English via a TV-conferencing system were held. The numbers of conferences and total participants were: during 1998, 8 sessions, 189 participants, and during 1999, 14 sessions, 196 participants. (b) A questionnaire was conducted to collect data on students' preferences and opinions concerning the international collaborative projects after each session. (c) Among eight items asked, five items were analyzed. Those are: (a) students' preference for the conference itself, (b) their evaluation of the usefulness of participation for improving English ability, (c) their evaluation of the usefulness of participation for understanding international relations, (d) their intention for future participation, and (e) the kinds of media used for preparation.

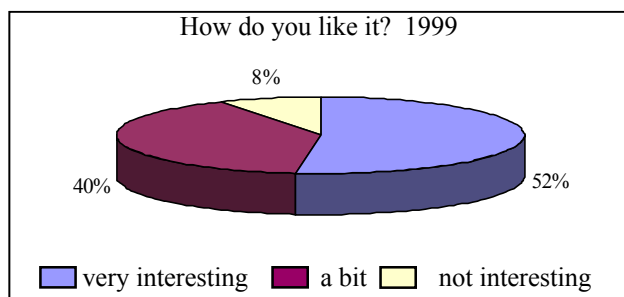
Results

1. Students' preference of the conference itself: As graph 1 and 2 show, during the two consecutive school years, over 90% of participants replied that the international collaborative program was interesting. The program includes preliminary preparations through video-phone or other media as well as the final international conference using the Video or TV conference system. The rate for the milder preference, "the program was a bit interesting", in 1999 was 14% more than that in 1998, however, the stronger preference, "the program was very interesting", in 1999 (52%) was 19% less than 1998 (71%). The reason for this decline in the rate will be discussed later.
2. Participants' evaluation of usefulness of participation for improving English ability and (c) their evaluation of usefulness of participation for improving understanding of international

relations: As Table 1 shows, in 1998, 82%, and in 1999, 71.3% answered it was meaningful to participate in these conferences for the purpose of improving English ability. In '98, 88%, and in '99, 84% answered it was meaningful to participate in these conferences for the purpose of understanding international relations. These results support the view that the international collaborative program was purposeful. The ratios for "No interests" in both items declined 3.7 points and 2.2 points, however, the ratios for "Not meaningful" increased 14.4 points and 6.2 points.



Graph 1. Preference 1999



(Kuramoto 1999)

Graph 2. Preference 1998

Table 1. Evaluation 1998 and 1999

		English Ability	International Understanding
Meaningful	1999	71.3%	84.0%
	1998	82.0%	88.0%
Not Meaningful	1999	23.4%	11.2%
	1998	9.0%	5.0%
No Interest	1999	5.3%	4.8%
	1998	9.0%	7.0%

(Kuramoto 1999)

- Participants' intention for future participation: The ratios in 1999 of those who replied "Yes, I will attend the next session" and "Yes, the program was meaningful" decreased, compared with those in 1998. However, as Table 2 and Table 3 show, for the 1999 data, the ratios of observed count exceeded those of expected count, that is; 64.9% (6% over) and 74.5% (4.9% over).

Table 2. Next Application* English Ability Cross Tabulations 1999

		English Ability				
			Not	No		
		Meaningful	Meaningful	Interest	Total	
Next Application	Yes	Count	120	28	4	152
		Expected Count	109.3	34.5	8.2	152.0
		% of Total	64.9%	15.1%	2.2%	82.2%
	No	Count	13	14	6	33
		Expected Count	23.7	7.5	1.8	33.0
		% of Total	7.0%	7.6%	3.2%	17.8%

Table 2. Next Application* English Ability Cross Tabulations 1999

		English Ability			Total
		Meaningful	Not Meaningful	No Interest	
Total	Count	133	42	10	185
	Expected Count	133.0	42.0	10.0	185.0
	% of Total	71.9%	22.7%	5.4%	100.0%

Table 3. Next Application* International Understanding Cross Tabulations 1999

		International Understanding				
		Meaningful	Not Meaningful	No Interest	Total	
Next Application	Yes	Count	137	13	2	152
		Expected Count	128.0	16.5	7.4	152.0
		% of Total	74.5%	7.1%	1.1%	82.2%
	No	Count	18	7	7	32
		Expected Count	27.0	3.5	1.6	32.0
		% of Total	9.8%	3.86%	3.8%	17.4%
Total	Count	155	20	9	184	
	Expected Count	155.0	20.0	9.0	184.0	
	% of Total	84.2%	10.9%	4.9%	100.0%	

Table 4. Next Application* English Ability Cross Tabulations 1998

			English Ability			
			Meaningful	Not Meaningful	No Interest	Total
Next Application	Yes	Count	51	1	4	56
		Expected Count	49.7	1.8	4.5	56.0
		% of Total	82.3%	1.61%	6.5%	90.3%
	No	Count	43	1	1	6
		Expected Count	5.3	0.2	0.5	6.0
		% of Total	6.5%	1.6%	1.6%	9.7%
Total	Count	55	2	5	62	
	Expected Count	55.0	2.0	5.0	62.0	
	% of Total	88.7%	3.2%	8.1	100.0%	

Table 5. Next Application* International Understanding Cross Tabulations 1998

		International Understanding				
		Meaningful	Not Meaningful	No Interest	Total	
Next Application	Yes	Count	50	1	5	56
		Expected Count	49.7	0.95	5.4	56.0
		% of Total	80.6%	1.61%	8.1%	90.3%
	No	Count	5	0	1	6
		Expected Count	5.3	0.1	0.6	6.0
		% of Total	8.1%	0.0%	1.6%	9.7%
Total	Count	55	1	6	62	
	Expected Count	55.0	1.0	6.0	62.0	
	% of Total	88.7%	1.6%	9.7%	100.0%	

4. The kinds of media used for preparation: The differences between 1998 and 1999 lie in the increase in the number of web user and the decrease in the number of video letters: 21.9% of participants in 1999 used the Internet, whereas less than 2.6% of participants in 1998 used the Internet.

Table 6. The Kinds of Media Used for Preparation - 1998 and 1999

	Book	Web	E-Mail	Newspaper	Interview	(Video) Letter	Others	
1999	29.6%		21.9%	15.8%	14.8%	11.7%	11.7%	20.4%
1998	-		2.6%	19.6%		13.8%	42.3%	16.9%

Discussion

The differences in the ratios for 1998 and 1999 might suggest that there have been gradual changes in the students' minds and their preferred learning styles for activities. I suggest there might be a significant correlation between their intention to apply for the next program and their evaluation of the program.

As the result for item (d) (see Tables 2 to 5) show, the number of observed counts in the 1999 data exceeded that of the expected number of counts. We might propose the null hypothesis here which would be: There is no relation between next application and participants' evaluation of usefulness for improving English ability or understanding international relations, that is, they are statistically independent.

However, the null hypothesis can be rejected by analyzing the cross tabulation result using chi-square tests. As for the 1998 data, there are over 3 cells whose expected count are less than 5. Therefore, I cannot adopt Pearson chi-square, and the null hypothesis cannot be rejected this way. On the other hand, as the asymptotic significance on Table 6 and Table 7, 1999 data, show, the null hypotheses can be rejected. So there are correlations between next application and participants' evaluation on improving English ability or on understanding international relations.

Table 7. Chi-Square Tests English Ability 1999

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.910 ^a	2	0.000
Likelihood Ratio	21.429	2	0.000
Linear-by-Linear Association	24.743	1	0.000
N of Valid Cases	185		

^a One cell (16.7%) had an expected count of less than 5. The minimum expected count was 1.78.

Table 8. Chi-Square Tests International Understanding 1999

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.762 ^a	2	0.000
Likelihood Ratio	23.263	2	0.000
Linear-by-Linear Association	29.776	1	0.000
N of Valid Cases	184		

^a Two cells (16.7%) had an expected count of less than 5. The minimum expected count was 1.57.

In addition to this analysis, I tried nonparametric correlation tests. Table 9 (1998 data) shows that there are no statistically significant correlations between "next application" and "participants' evaluation of usefulness for improving English ability and of understanding international relations ". On the other hand Table 8, 1999 data, shows that there are statistically significant correlations between these two items.

Table 9. Correlations 1999

		Next Application	English Ability	International Understanding	How do you like it?
Spearman's rho	Next Application	1.000	0.353**	0.368**	0.463**
	Correlation Coefficient		0.000	0.000	0.000
	Sig. (2-tailed)				
	N	191	185	184	187
English Ability	Correlation Coefficient	0.353**	1.000	0.642**	0.256**
	Sig. (2-tailed)	0.000		0.000	0.000
	N	185	188	187	185
International Understanding	Correlation Coefficient	0.368**	0.642**	1.000	0.202**
	Sig. (2-tailed)	0.000	0.000		0.000
	N	184	187	187	184
How do you like it?	Correlation Coefficient	0.463	0.256**	0.202**	1.000
	Sig. (2-tailed)	0.000	0.000	0.006	
	N	187	185	184	192

**Correlation is significant at the 0.01 level (2-tailed).

Table 10. Correlations 1998

		Next Application	English Ability	International Understanding	How do you like it?
Spearman's rho	Next Application	1.000	0.219	0.058	0.274*
	Correlation Coefficient		0.087	0.652	0.032
	Sig. (2-tailed)				
	N	62	62	62	61
English Ability	Correlation Coefficient	0.219	1.000	0.521**	0.248**
	Sig. (2-tailed)	0.087		0.000	0.000
	N	62	221	221	220
International Understanding	Correlation Coefficient	0.058	0.521**	1.000	0.341**
	Sig. (2-tailed)	0.652	0.000		0.000
	N	62	221	221	220
How do you like it?	Correlation Coefficient	0.274*	0.248**	0.341**	1.000
	Sig. (2-tailed)	0.032	0.000	0.000	
	N	61	220	220	220

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

These data show that participants in 1999, compared with those in 1998, have clearer opinions concerning collaborative work. Those who answered that the program is either meaningful for both purposes or improving English ability and understanding international relations replied they will attend the next session. Table 8 also shows that next application and preference for this program have a statistically significant correlation of 0.463. Even though the ratio for the overall preference decreased by 19 points, those who admitted to meaningful participation in this program appreciate this type of learning style. This means that those who evaluated the collaborative work and have the intention to improve their language ability and international understanding need this kind of interactive learning environment.

Another additional item of data to support this insistence is the statistical result of nonparametric correlations between "next application" and "participants' future interests". The questionnaire asked students how they are starting to appreciate eight items after participating in the program. The eight items are related to the participants' future interests and are: (a) To study English, (b) to participate in collaborative work for study, (c) to participate in collaborative work for play, (d) to make overseas friends, (e) to get more information on local culture, (f) to get more information on global culture, (g) to get more information on daily life, and (h) to get more information through cybernetwork. As the first column in Table 10 shows there are statistically significant correlations between next application and these 8 items. This result suggests that the students are seeking new learning environments which enable them to have better chances to interact with people in society.

One final item of data which supports the above insistence is the result (e) shown in Table 3 (the media they used for preparing for this series). The difference between 1998 and 1999 is the increase in the number of web users. Even with the limited hardware high school environment, students managed to collect information about their peers through the Internet instead of video letters in order to have a better communication with their peers overseas. These students' and teachers' collaboration and efforts make the learning environment more attractive and interactive. Eventually they will enjoy learning English.

Table 11. Correlations 1999

		Next Application	Language	Collaboration (study)	Collaboration (play)	Friends	Local Culture	Global Culture	Daily Information	Cyber Information
Spearman's rho	Coefficient	1.000	0.298**	0.324**	0.191**	0.445**	0.261**	0.243**	0.223**	0.164**
Next	Sig. (2-tailed)		0.000	0.000	0.008	0.000	0.000	0.001	0.001	0.023
Application	N	191	191	191	191	191	191	191	191	191

Conclusion

According to Vygotskian theory, higher mental functioning in the individual derives from social life and human creativity is brought out only after manipulating the mediational means properly. Therefore, we need appropriate mediational tools to activate our higher mental processes to interact with everyday concepts.

We need multi-layers of intrapersonal and interpersonal interactions. Multimedia, including the cybernetwork, enables these interactions for our purpose to promote learners' creativity and proficiency in the target language. What is essential in teaching L2 is not only promoting learners' direct internalization of the target language but also their externalization of its dynamic usage.

In the preceding argument, I have compared and contrasted the results of questionnaires taken in 1998 and 1999. The analysis revealed the importance of a learning environment which enables learners to have voluntary and mutual interactions both in local and global collaborative works. From this point, it might be said that the third mediational tools, such as TV-conferencing systems, computers, and the cybernetwork, should be more actively

utilized in L2 international collaborative learning activity in order to promote learners' voluntary creativity and proficiency in the target language.

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Instructors' and Students' Perception and Utilization of Technology

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Abstract

From 1990 to 1999 Dartmouth saw significant changes in the number of students visiting the physical Language Resource Center, in the use of equipment, in materials, in the types of requests for services from the center by students as well as faculty, and in the number of individuals logged on to the servers. Dartmouth—having the reputation of a wired campus—has maintained parallel technology, i.e. availability of traditional services together with high levels of digital services while no changes in the instruction of languages were attempted over the last decade. In late 1999 Dartmouth College's Language Resource Center conducted a comprehensive survey of instructors and students for the purpose of gaining insight into usage and perception of technology in teaching and learning. The data obtained in this survey will help us to plan for services and facilities that should be renovated and become available by about 2004.

Introduction

Ivy League schools in the United States have a fairly high reputation when it comes to instructor qualification, facilities and infrastructure. Being on the inside of such an institution one realizes quickly that these institutions differ little from other institutions. Instructors build their little empires and continue the way they were taught until there is a new dean, chairperson, or rabble rouser who wants change and is ready to sacrifice his or her life in the implementation battle. When Otmar first came to Dartmouth, for example, the language lab stations were owned by individual departments and when, on his second day, he removed the sign “Spanish Department” from a group of six workstations, he was immediately called by a member of the then reigning junta and told that “you can’t do this.” He learned his lesson quickly and decided to use diplomacy rather than war to battle with established departments, prima donnas, and absolutely marvelous instructors.

Diplomacy and respect for the wonders as well as the disasters of new technologies made us go fairly slowly with complete implementation of new technologies. In fact, we have been following a very careful course of sticking to what we have been calling parallel technology—we maintain the traditional technology while offering the option of using digital technologies at the same time. In other words, a student has the option to work on a Tandberg machine with audio cassette tapes, to work with digital audio files on the computer, and to work directly on the web with streaming audio and video. In all three cases the quality is the same, the access is different—sometimes easier, sometimes harder.

Using exit surveys and sending out several questionnaires over the last couple of years accumulated the data for us that we needed in our implementation process. This year, during the spring term, we did a more comprehensive survey that allowed us to assemble a better picture of how people think about what’s going on with technology in language instruction.

1. A few disclaimers up front:
 - a. This is not a scientific survey.
 - b. We are dealing with raw data that has not been touched by statistical tools.
 - c. Data was collected during transition from traditional lab to virtual lab.
 - d. This data is based on a particular institution that is not necessarily typical.
 - e. Our conclusions are as good as the sample from which they came, i.e. we should have some doubts about the general validity.

2. Our data was collected in a single survey that took place roughly two thirds into our spring term. This spring term was selected because it has few beginners' courses. Most students taking language courses would already have taken one or two courses at the institution and would be familiar with the campus, to analog and digital facilities, and would have had different instructors. Their perceptions, therefore, would be more realistic than the perceptions of a student in the first semester.

Since we collected data from instructors as well, the number of instructors teaching different courses on different levels promised a better data return than a fall-term survey, when many instructors are teaching several sections of the same course simultaneously.

3. We sent out a total of 551 surveys to students and received 266 back giving as a response rate of 48% of which 49% were males and 51% were females. 76% of the students used Macintosh computers and 25% used Windows-based computers. We sent out 27 surveys to instructors and received 23 back giving us a response rate of 85% of which 19 % were males and 81% were females. On campus 57% of the instructors used Macs and 5% Windows-based computers. At home 43% used Macs and 10% PCs.

Our student data, therefore, is far more significant (and of greater value to us) than our instructor data, which, unfortunately, is not sufficiently large enough to allow for very solid conclusions.

Dartmouth College is not a typical institution when it comes to language teaching and learning. Our institution still has a language requirement and has every intention of keeping it. It is interesting to note that few people on campus are aware of this requirement—everybody takes for granted that students study at least one language if not two. Dartmouth presently teaches ten languages within complete departments and two on a “demand” basis. We operate on a quarter system, i.e. four terms per year. We also offer our language students a large number of LSA Programs (Language Study Abroad) and FSP Programs (Foreign Study Programs) to satisfy the need for intermediate and advanced language and area studies in foreign environments. Internally, i.e. on campus, language courses on the elementary and intermediate level have four contact hours with an instructors, four contact hours with a T.A. and often a required or suggested lab experience of two hours per week. The T.A. sessions are highly structured drill session run by T.A.s who have been trained in the Rassias method.

Utilization of the language laboratory varies widely among different departments, instructors, and students. Dartmouth's Language Resource Center does not have a console and does not have instructors or human monitors inside the lab. Some instructors require attendance, some do not care. We do keep track of the number of visits per term via a barcode reader at the entrance. The lab has 12 iMac stations, 4 PC stations, and 5 video stations and some other equipment and spaces that have no relevance to the survey.

Usage of “smart” (i.e. electronic) class rooms at Dartmouth College is still somewhat low. The reason lies in the small number of available rooms—fortunately, the administration has taken steps to correct this situation and is updating classrooms rapidly. Smart Rooms at this moment contain high-end Macintosh computers with data projection and 100BaseT internet access.

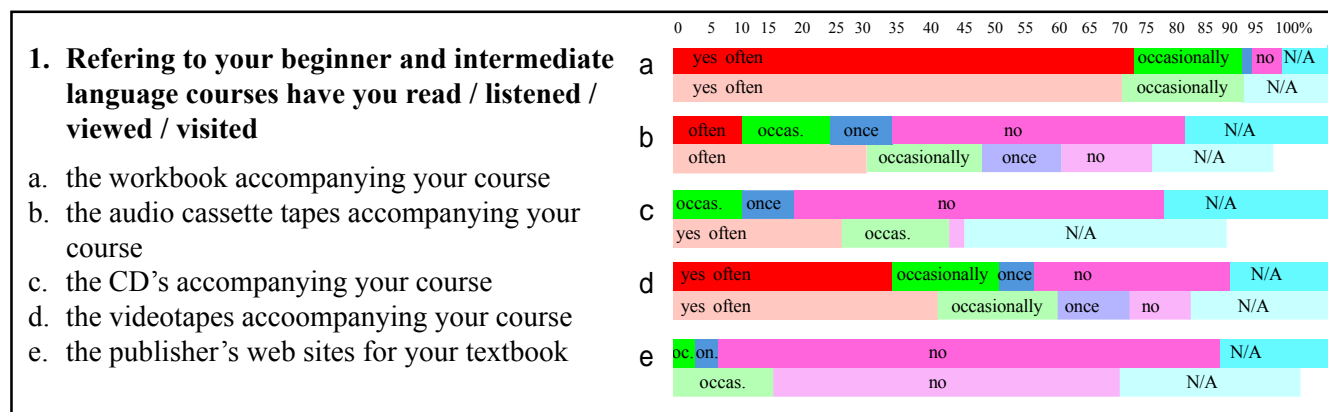
Why did we conduct this survey? We had two good reasons. The first one had to do with our implementation of digital services. Some of you may have gone to Otmar Foelsche's talk on streaming audio and video in which he pointed out some of the transition aspects in changing over from traditional lab services to digital lab services. This survey, and preceding surveys, provided us with the essential data that helped us through a fairly easy period of transition without causing a big stir on campus.

The second reason was a strategic one. We wanted to raise the consciousness level regarding technology and regarding our center among students and instructors. In other words, we didn't mind at all putting a little guilt trip on some instructors by making them think about their classes and approaches when filling out our survey form! As you will see, the survey asks some specific questions about technology usage in classrooms. We are quite sure that some instructors took the hint!

Discussion

In the following I'll go over the most important results by providing you with the questions and results on overhead transparencies. Each transparency contains the questions in the upper half and the results in the lower half in diagram format. The letters preceding each question also precede each diagram. The upper part of each diagram represents the students responses, and the lower part represents the instructors responses.

Question 1



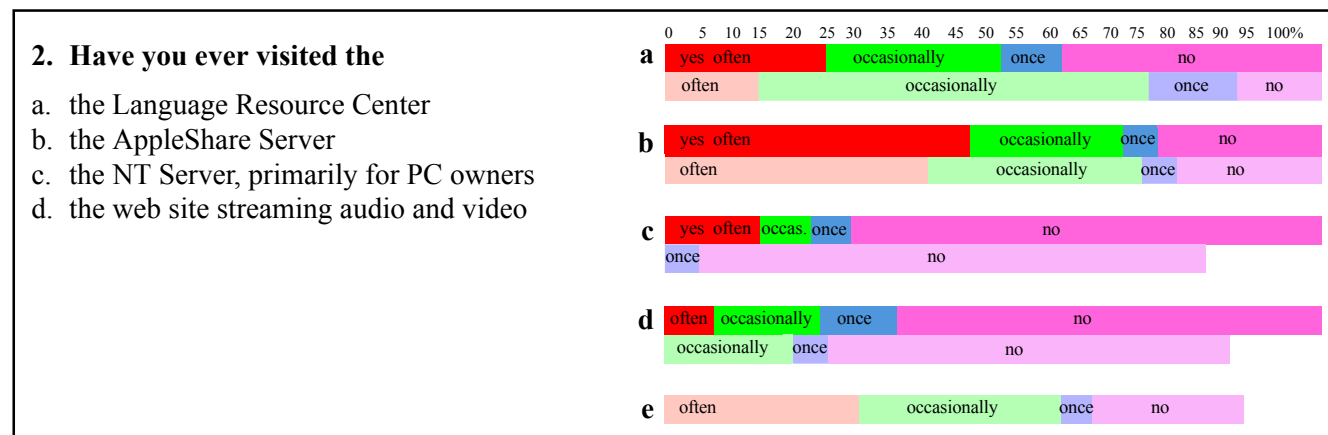
Line a—Our responses clearly indicate that the workbook is used by students and instructors to a very high degree.

Line e—A publisher's website, on the other hand, seems to generate more interest among faculty than among students at this point, but still shows a little use.

Line b—The use of audio cassettes among students is down to 10%—whereas instructors still make use of them.

Line d—Video tapes are used more often than audio cassettes tapes—and this is no surprise!

Question 2



Line a—This represents the physical visits to the Language Resource Center. Interesting to note is that 40% of our students never went to the Center. (This is also in line with general statistics that we kept over the years that lab attendance is down but server connections are up!)

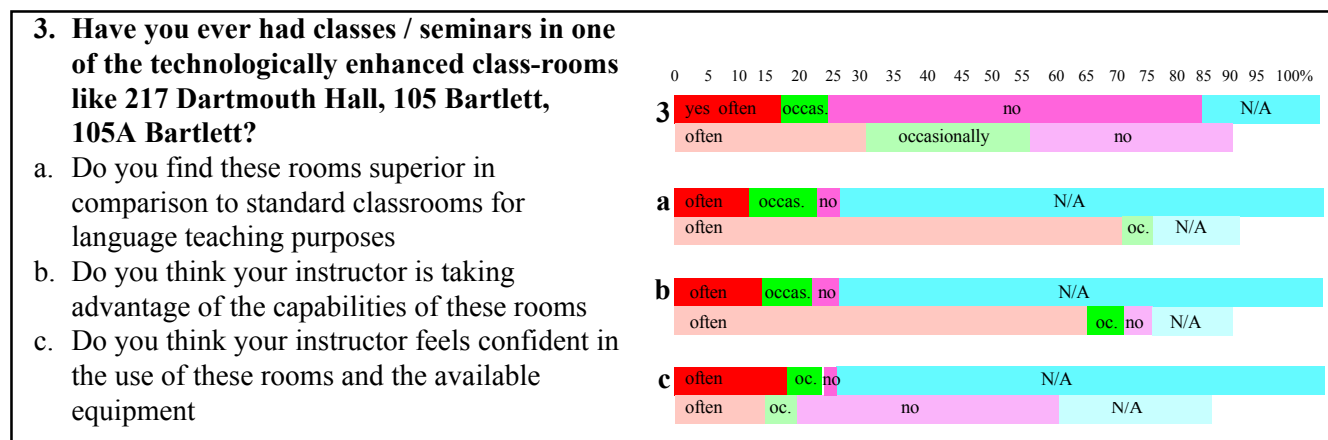
Line b, c, and d—represent server usage.

Line b—For historical reasons, the AppleShare Server, seems to be the most popular among students and faculty—it has been there for more than five years.

Line c—represents the NT Server—primarily for use by PC owners. Both AppleShare Server and NT Server use is in line with the distribution of various platforms on campus.

Line d—represents the web site with streaming audio and video, which has only been available for a year at this point. The fact that 45% of the survey population used the AppleShare Server often and that 15% of the population used the NT server often is indicative to us that digital services are very much accepted by our clients.

Question 3



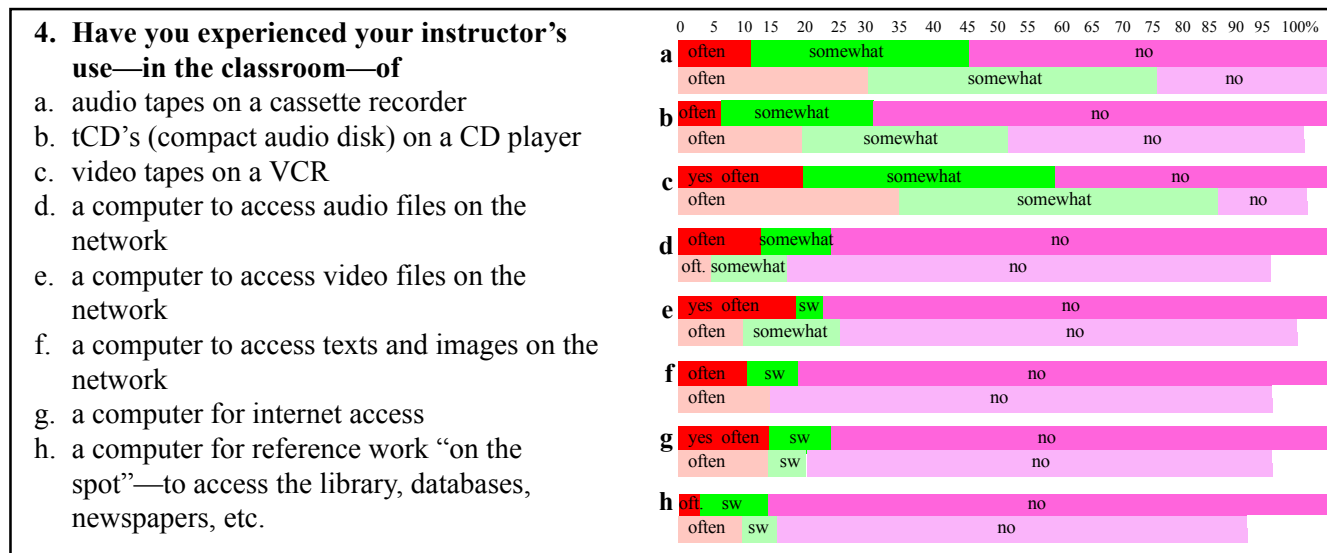
Line 3—shows that less than 20% of our students have had the opportunity to have classes in the smart or “technologically enhanced” classrooms. Instructors have had more exposure since they teach other classes that are not necessarily language classes as well.

Line a—is particularly revealing. 65% of the instructors find smart classrooms superior, yet only ten percent of the students seem to feel that superior instruction can indeed be offered in these rooms.

Line b—Another highly divergent aspect is revealed in line b: Less than 15% of the students believe that the instructor is taking advantage of the capabilities of the smart classroom, whereas 60% of the instructors believe that they are taking advantage of the smart classroom.

Line c—Yet, the data becomes even more puzzling in line c: more students than instructors feel that instructors are confident in the use of technology. On another twist: very few students think that instructors are not confident, whereas many instructors feel that they are not confident.

Question 4



Lines a, b, & c—Whereas the first three questions deal with rather “soft” issues,

Lines d, e, & f—questions d, e & f deal with “hard” issues.

Line a—The student response shows how little audio cassette machines are used in instruction—only about 12 % of the students use them often!

Line b—shows similar results for compact audio disks, and

Line c—makes it clear that the VCR is definitely used more often than audio cassette machines.

Interesting to note: access to digital audio and video via the network seems to reach as many students at this point in time as access via cassette recorder and VCR in the classroom. (Compare lines **a** & **c** with lines **d** & **e**.)

Lines f, g, & h—probably indicate that those instructors utilizing the network for audio and video will also utilize the network for texts, images, internet access, and for reference work.

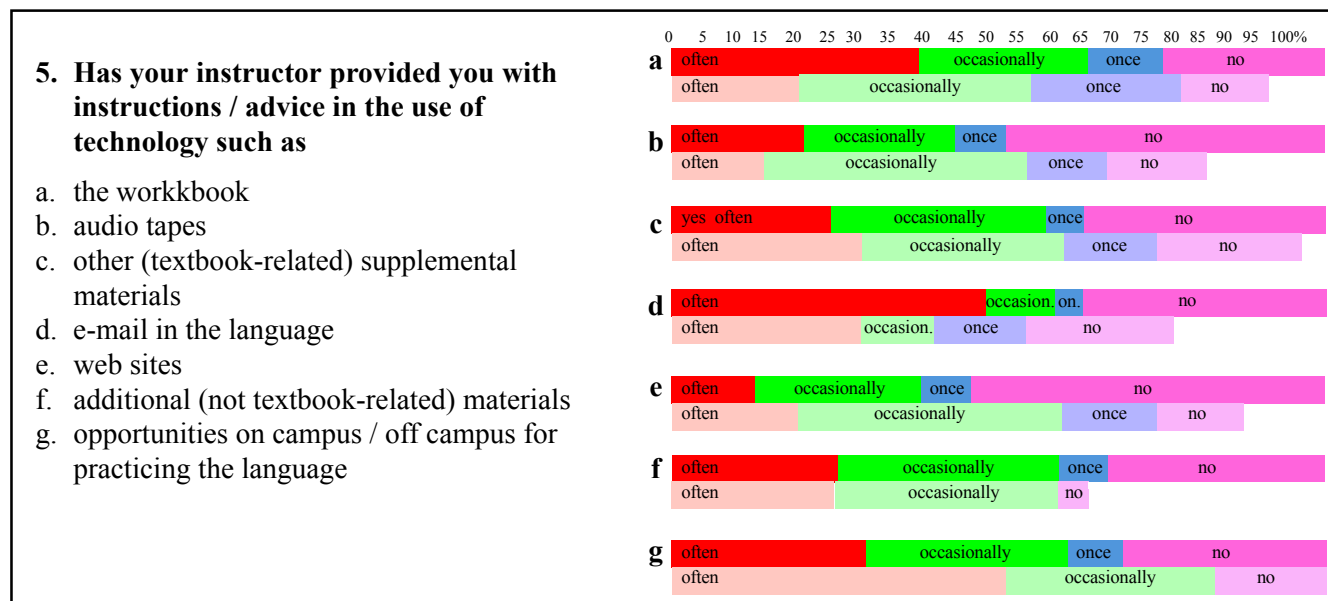
Video via VCR and video via the network seem to reach close to 20% of the survey population in the classroom. Less than 5% (**Line h**) of the survey population have experienced the instructor's use of a computer for reference work “on the spot.”

We find this data rather interesting since it allows us to do some speculating. The most difficult thing to do in the classroom, from a user perspective, is to handle technology that is complicated and not easily manipulated—searching dictionaries and catalogues in front of students (possibly with unknown results) require enormous

confidence on the part of the instructor. Operating traditional technology like a VCR or an audio cassette machine, on the other hand, is simple. When looking at lines **e** and **d** it also becomes clear that digital technology has gained momentum and will probably replace the mechanical devices in a short time since its use is becoming easier and therefore inspires more confidence.

Question 5

Addresses a rather broader area, ranging from stone-age technology to PR (Public Relations).



Line a—Close to 75% of the survey students have been instructed in the use of the workbook by the instructor.

Line b—About 50% of all students have been instructed in the proper use of audio tapes. (This may be interpreted as instructors' attitudes towards audio tapes in general...)

Lines c & d—More than 60% of instructors talk about supplemental materials and provide instructions in the use of e-mail.

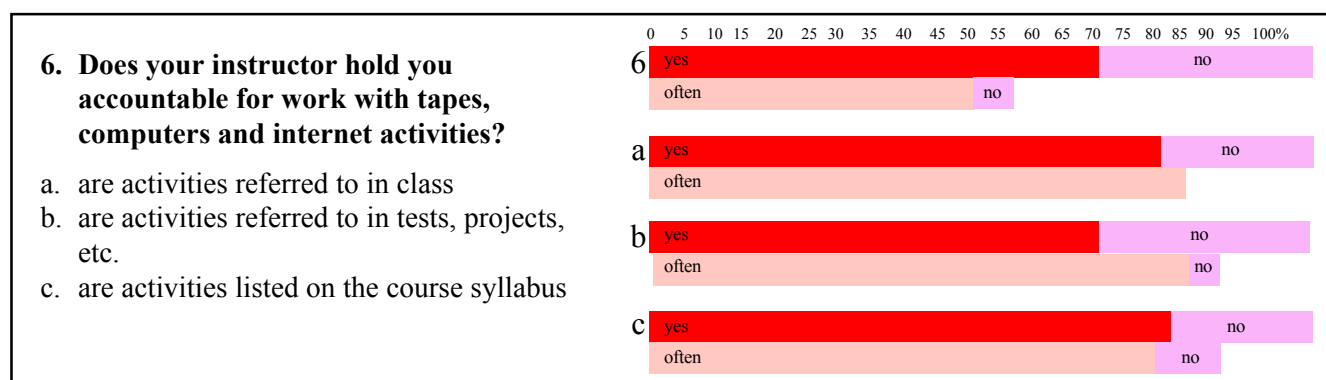
Line e—Close to 45% of instructors mention web sites. And more than two-thirds of all instructors provide additional information.

Line d—The high percentage of “e-mail in the language” has probably been caused by Dartmouth's internal e-mail culture that started in 1987 with the launch of blitzmail—a very easy to use mail system that is more or less part of the Dartmouth culture. The term “blitz me” is in wide use and simply means “send me an e-mail.” The fact that close to half of the instructors provide advice on websites at least once during the term is good news.

Otherwise, in our opinion, the data shows very clearly that instructors are doing “their thing,” i.e. there are many different approaches and individual styles for teaching languages on our campus.

Question 6

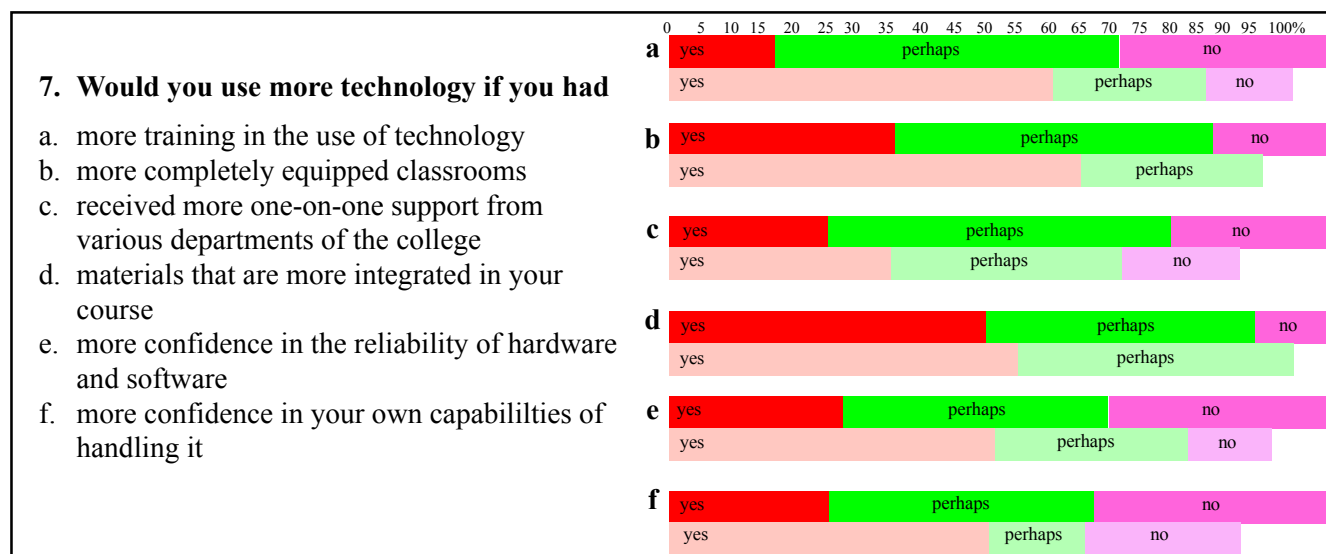
Provides solid evidence from students and instructors using the new technologies that integration of technology in the classroom is taking place.



Lines a, b, & c —A whopping 2/3 of students and instructors believe that activities are referred to in class, in tests, and in projects, and that activities are listed at the beginning of the term in the course syllabus. We were surprised and delighted about the survey results in this area!

Question 7

7 is a “what if?” question.



Line a—Instructors clearly would use more technology if they had more training.

Line c—Yet, as line c indicates, only 25% of the instructors are interested in one-on-one training—so they must be looking at other types of training.

Line d—And—line d also seems to indicate that instructors want to have more materials that are integrated in the course (we did not ask the question whether instructors would be willing to produce and integrate their own materials...).

Line f—shows that instructors want to gain more confidence in handling technology.

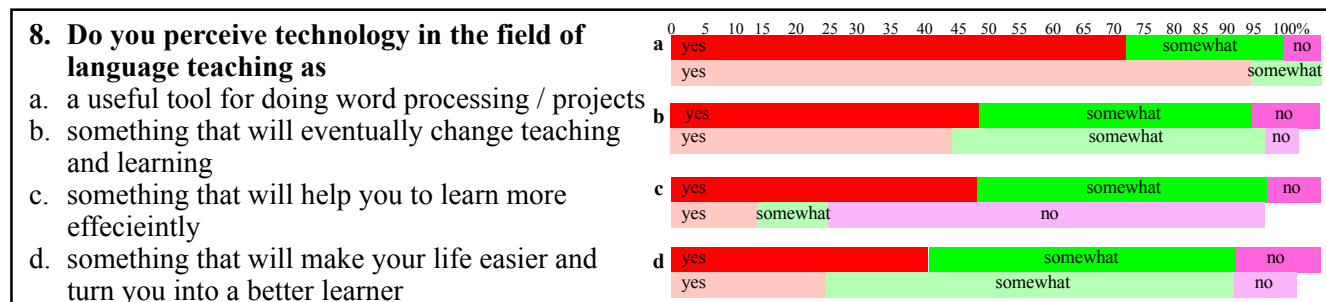
Another interesting result can be read out of line a.

In very small surveys about ten years ago we gained the impression that student bodies and their attitudes towards learning with technology can roughly be divided into three groups: (a) the unenthusiastic technology supporter, (b). the “let’s see whether technology can really do it better” group, and (c) the opponents of technology.

Lines a, b, c, and f—show a similar pattern of three fairly clearly defined groups making up thirds of the population.

Question 8

Deals with the perception of technology in language teaching.



Line a—Both students and instructors attest to the usefulness of technology in language teaching,

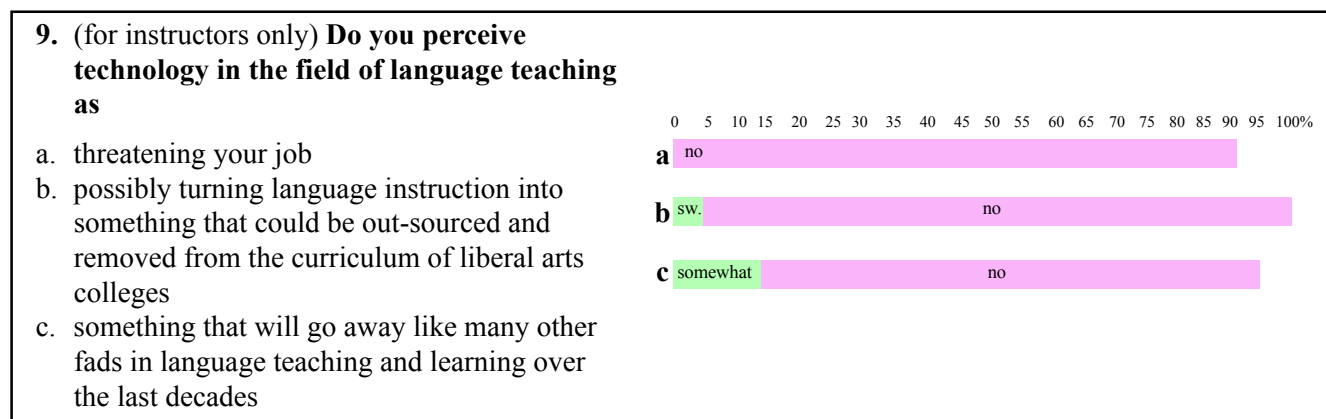
Line b—and both groups seems to agree that technology will eventually change teaching and learning.

Line c—Yet a vast majority of students believe that it will help them to learn more efficiently, whereas only 25% of the instructors believe that it will make you learn more efficiently.

But—nevertheless—both instructors and students agree that technology will make your life easier and turn you into a better learner.

Question 9

Deals with the perception of technology by instructors only in the context of job security and the future of language teaching.



Line a—None of our instructors seems to be threatened by the technology,

Line b—only a few worry about outsourcing,

Line c—but an amazing 15% think that technology might possibly go away again like any other fad of the past.

These answers are very institution specific. WE are quite sure that a totally different set of answers could be obtained from institutions where the administration is looking at technology as a potential money saver.

Written Comments

We provided space for written individual comments and received 148 from students and 28 from instructors.

Students' comments range from a straight forward "I hate technology" to many suggestions about how technology can serve in their learning process. Many of these comments can be traced to individual learning and teaching styles. These comments are a very clear pointer to instructors and centers to use a multitude of approaches in teaching and assignments and to make many different types of materials available for individualized study. Students request more areas of interaction, of speaking and listening but are quite aware of the limitations of the technology for interactive exercises and particularly for those involving speech recognition. Students want more pronunciation drills with feedback, they want more video, they want more web-sites, they want more access to remedial services and activities and self-help for all aspects of language learning. In general, the comments show a high level of enthusiasm and willingness on part of the students to be responsible for their own learning.

Instructors sent us numerous carefully phrased comments about what's needed. They, too, stress speaking, listening, interaction, and integration. They want to have more and better materials, preferably video and audio. They stress the need for more smart classrooms, they stress the use of computers in areas where computers could work well—pronunciation drills, feedback for pronunciation correction, cultural materials, listening comprehension materials, possibly video conferencing across the internet.

Conclusions

For our lab, surveys of this type have provided excellent data for creating internal political pressure for more smart classrooms, for funding the ever needed replacements of old machines, for network updates and for the acquisition of new materials. In addition, we have raised the consciousness level of administrators, instructors, and students about the center and what it can do for them.

We think that our collected data shows a generally high acceptance of technology in language teaching and learning. But it also shows that a lot of learning is taking place with minimal use of technology.

We also believe that we have to pay quite a bit of attention to a fairly significant section of our clients who do not like technology at all and need to be provided with alternative means or with utterly convincing technology that works extremely well and makes the user possibly forget that he/she is working with technology rather than an instructor.

So we have quite a way to go. This is an evolutionary process in which the perception of technology will change as we understand more clearly where it fits in with teaching and learning languages.

Integrating the Internet into English Language Teaching

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Abstract

Globalization is a fact, and the rapid development of information technology across cultures has altered the environment for language teaching. Video watching and listening offers exciting possibilities for English language learning. The use of electronic mail is a good opportunity for students to exchange their messages with pen-pals while improving their reading and writing skills in English. Internet web sites provide students with numerous resources necessary for gaining background cultural knowledge.

The aim of English language learning is to acquire the ability to communicate with others in English. Communication is the key to language development; the four skill areas of listening, speaking, reading and writing will serve as organizational conveniences for reaching this aim. The process of English language teaching should also be communicative. The use of video and the Internet is useful in the communicative approach to English teaching.

This paper is to study the teaching process of video, the E-mail and the World Wide Web Site system in the CALL classroom, focusing on the validity of the communicative approach to English teaching as well as the practicability for cross-cultural understanding.

Aims

This paper consists of three parts: the aim of the first part is to focus on the use of video as an authentic teaching material. The interview video material, "Impressions of Britain" was produced by the presenter in cooperation with three teaching staff at the University of Manchester. Video listening activities will be followed by giving presentations in groups regarding the profiles of the five interviewees in the video and their cultural backgrounds.

The aim of the second part is to let students develop their communicative writing and reading abilities by exchanging E-mail messages with the interviewees in the video film, based on the pre-view and post-view activities.

The aim of the third part is to let students acquire background knowledge by opening Internet web sites: e.g. CNN News Articles, USA Today, UK Guide, etc. Reading activities on the Internet will be followed by giving presentations in groups.

Subjects in this study are 500 students at Aichi University: sophomores belonging to the Faculty of Law and Business Administration. Having learned English as a foreign language for about seven years in schools, they have approximately a low to intermediate level of English.

Methods for Improving Computer and Internet Literacy

It is necessary to let students acquire computer and Internet literacy in order to operate computers, word processing, managing the Internet, sending or receiving the E-mail messages, graph and list making and composing the web site pages. Aichi University has various kinds of seminars open for students to improve their computer literacy before attending English CALL classes.

Seminars for Improving Students' Computer Literacy

1. Students: Compulsory for 1,000 Freshmen
2. Date: Monday - Friday (Everyday)
3. Levels: (a) Computer Operating
(b) Typing

Seminars for the Internet Literacy

1. Students: Elective for All-Grade-Students
2. Date: Monday and Thursday
3. Levels: (a) Word Processing
(b) The Internet
(c) E-mail Message
(d) Graph and List Making

Self-taught Laboratory for the Internet Literacy

All the CALL classrooms having 300 computer machines in total are open to the students available at any time during the whole period of the academic school year: from 8:00 a.m. until 20:00 p.m. each day. School environment and facilities are necessary for students to have chances of self-taught lessons for information technology using multi media as extra activities.

Strategies for Integrating 4 skills by Using the Internet

Procedures for improving English four skills by using the Internet are:

1. Listening comprehension drills by using videos
2. Reading web site articles by means of the Internet
3. Writing E-mail messages
4. Giving presentations on the summary of the reading material.

Video Listening Comprehension

Objectives of Off-Air Video Extract

For teachers in non-English-speaking settings, recordings of English language broadcasts of satellite are a fruitful source of authentic material for their English classes.

MacWilliam (1986) points out as follows:

Video is most widely used to introduce and stimulate interest in a topic to give information on cultural background and for general language spin-off. Video is found most helpful in developing aural/oral skills, particularly listening skills....

Off-air material has the advantage of being free, offers a range of high quality, and is ready accessible. Off-air material makes video synonymous with using authentic material. In order to meet students' needs and interests, the video extract was selected from BBC news broadcast, the Olympic Games 2000 in Sydney.

Criteria for Selecting Video Materials

Arcario (undated) points out that comprehensibility is a major criterion in selecting programs for language presentation. Comprehensibility of a video is primarily affected by (a) the degree of visual support, (b), the clarity of picture and sound, (c) the density of language, (d) the speech delivery, (e) the language content, and (f) the language level.

When using video to present language, it is important to choose scenes with a high degree of visual support. Sydney Olympic Games 2000 are of great use for visual support.

Clarity of speech, speech rate, and accent are all factors in determining how difficult an off-air video extract will be for students to comprehend. BBC broadcasters are professionals in delivering the news articles with clear sound, correct pronunciation, and standard accent, which will contribute to the good teaching material for Japanese students. The rapid speech rates, however, will be difficult for low- and even intermediate-level students.

The most crucial factor to consider in selecting video programs for Japanese students is the language density—the amount of language spoken over the course of a particular scene.

The level of difficulty of the language in an off-air video extract is another crucial factor for low-intermediate-level students to consider in selecting material for comprehension. Arcario suggests that there are two ways to use video programs that contain language too difficult for the level of students. First, you do not need to show the whole program. Second, give the students an easy task in conjunction with viewing.

Tasks to Help Students: (1) Reading Material and (2) Clues about Key-Terms.

1. Reading Articles from CNN Web Sites

“Takahashi takes Japan’s first Olympic marathon gold”

SYDNEY, SEPT 24 (AP) Naoko Takahashi became the first runner from Japan to win an Olympic gold medal in the marathon on Sunday, when she destroyed a world-class field in the heat of the Sydney sunshine to take the women’s 42.2-kilometer race. She pulled away from her opponents with some fearless front running in the latter stages, crossing the finishing line in Stadium in an Olympic record 2hrs 23min 14sec, a world-class time despite the tough course in hard conditions. It was the first ever Olympic athletics gold for a Japanese woman.

2. News Articles from CNN Web Sites

See Figure 1.

Activities

Wills (1983) points out that the activities should provide the opportunity for purposeful viewing; it should create a need for students to be actively involved in processing the information they receive. That is to say, an activity should represent a useful achievement on the part of the students.

According to McGovern (1983) the video has three roles. First of all, it beautifully contextualize the new teaching items. Secondly, it offers a ready context for review of material. Thirdly, it enhances students motivation by varying the classroom activity.

As Stempleski (1990) reminds us, there is no one right way to use video in the classroom. Nevertheless, the following guidelines are suggested in using the medium for intensive language practice and presentation:

1. to show short sequences
2. to allow for repeated viewing

3. to encourage active viewing
4. to present activities before viewing
5. to familiarize students with the material

Roles of Video in the Language Classroom

Willis (1983) proposes six categories for roles for the use of video as follows:

1. to give listening practice and chance for oral practice
2. to show target situations where in students can use their own words, e.g. role plays
3. to illustrate the target language in use
4. to expose students to messages which illustrate discourse structures
5. to provide a source of information which is relevant to students' needs and interests
6. to provide materials to act as a stimulus for classroom activities

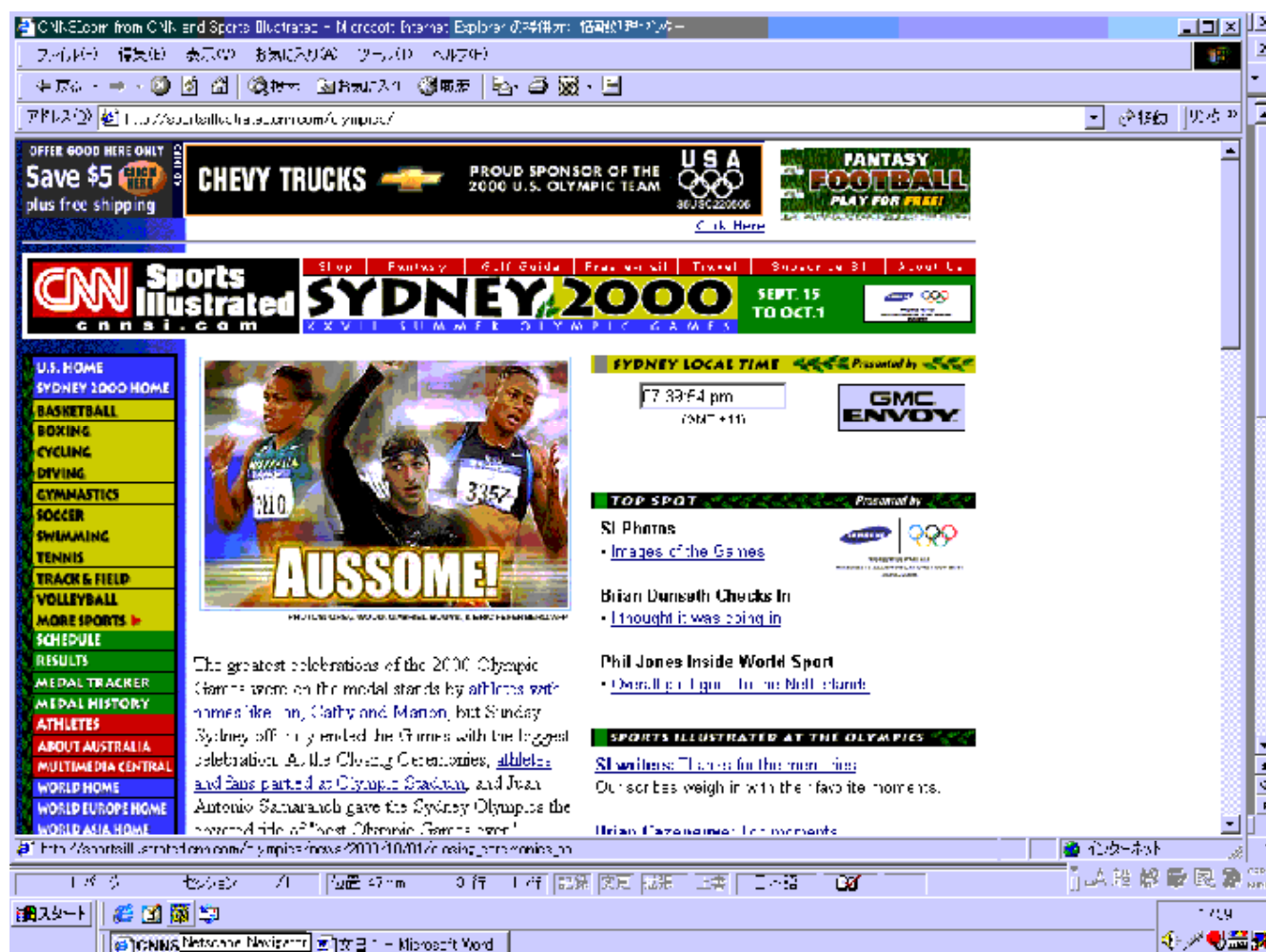


Figure 1. News articles from CNN Web sites

Video Filmed Material

We can make use of many kinds of resources: the idea for video production is a way of producing creative and authentic teaching materials which will encourage students to practice English in the communicative way.

Video Filming Project

The steps in doing a video film project are as show in Table 1.

Table 1. Doing a Video Film Project

Step	Details
1. Title:	“Impression of Britain”
2. Topics:	Weather, Food, Pub, People, etc. in Britain
3. Data Set-up:	(a) Overall sight-shots around the University campus (b) Interviews
4. Interviews:	With students form Germany, Cyprus, Greece, Switzerland, and Poland
5. Place	Campus in the University of Manchester
6. Production Dates:	Filming and Editing : July, 1998
7. Running Time:	15 minutes

Aims of Video Production

The aims of video production are:

- to present cultural topics
Interview films can provide a good “way in” to a topic and can be an excellent introduction to British culture for the students.
- to develop listening skills
Listening comprehension is undoubtedly helped by the visual element, and students can understand far more in a video sequence than they can from an audio dialogue.
- to stimulate conversation and discussion
Students are very keen to talk about what they have seen in a video. They exchange their opinions on different characters in an interview.
- to build descriptive and narrative skills
As a continuation of interviewing, video sequences can be used to develop students’ ability to describe people, places, and situations, and also to develop narratives.
- to show what people from different countries think about British culture
It is a matter of interest for students to know what opinions people have from their different points of view.
- to stimulate motivations to learn English language

Overseas students from various countries speak good English as a foreign language, and they express themselves frankly with an open-minded attitude, answering actively in the interview. To listen and watch the video will stimulate our students in Japan to improve themselves in listening and speaking English.

Questions and Answers in the Interview:

- Where are you from?
- How long have you been in Britain?
- What's your impression of British food?
- What do you think of British pubs?
- What do you most like about Britain?
- What do you most dislike about Britain?
- What's your impression of British people ?
- What do you think of British women?

Worksheets for “Impressions of Britain”

1. Where are Dina, Berna, Ute, Sina, and Gregory from?
2. Give presentations about profiles of Berna, Dina, Ute, Sina, and Gregory in groups.

Dina:

- Dina was born in Greece. She likes BBC programmes.
- She dislikes the weather in Britain, because it's very terrible. It's cold and wet.
- She loves the British pub because of its cozy atmosphere as a place of communication.

Berna:

- Berna comes from Cyprus, in the Mediterranean, South Turkey.
- She likes the way British people handle her. Everybody takes good care of her
- In Cyprus it's very hot; boiling hot. The weather in England is cold for her.

Ute:

- Ute is from Germany and She has been staying in Britain two years.
- She likes English language, people's hospitality and the nature in Scotland.

Sina:

- Sina is from Switzerland and she has been in Britain only for ten days.
- She likes British people, who are very friendly.

Gregory:

- Gregory is from Poland, and he has been in Britain for a month. This is his 4th visit.
- He likes rock music, dance, disco music, and the night life in Britain.
- He likes the Indian food, which has become a part of the British cuisine.

Effects of Video Listening and Watching

There are a lot of effects and benefits from using self-made video film as a teaching material.

1. It is a means of internationalization
Video introduces people of different countries, ages and types. This is valuable in a non-English-speaking environment, where students do not have much contact with people abroad.
2. It provides a full context for English
Students not only listen to the language, but also learn who is speaking, what they look like, and what they are interested in. Students are aware of non-verbal information by watching facial expressions and gestures. This helps them to work out the meaning of what is said.
3. It provides background cultural information
“Impressions of Britain” has a clear cultural context regarding Britain, and this lets students be interested in the culture along with the language in a natural way.
4. It is memorable and motivating
Students are very interested in video programmes, made by their own teacher. Her enthusiasm seems to lead students to highly motivated language learning.
5. It is part of contemporary life
“Impressions of Britain” forms an important part of contemporary British culture: how people enjoy their food, weather, pubs, and what they think of people of the opposite sex.
6. It adds variety to the classroom
This is one of the main benefits of video. Working with video is seen as fun. It also encourages students to send their e-mail messages to persons in the interview on the video.

E-Mail Writing

This paper shows how such a video production can be combined with an E-mail exchange project: students correspond by E-mail with pen-pals in another country, learning about each others' lifestyles and cultures. Then, in response to their pen-pals' questions and comments, inter-cultural communication will begin based on mutual cultural awareness.

Details of the E-Mail Exchanges

At the University of Manchester, I made contact with teachers who were willing to join the video production as interviewees in the filmed interview, to exchange E-mail messages with students of their universities. They are from Greece, Cyprus, Germany, Switzerland, and Poland. All of them are interested in such an E-mail exchange project. They want their students to have direct contact with people living in another country.

How to Use the E-Mail System

A seminar for Computer Processing and E-mail System was held at the Aichi University Computer Center at the beginning of each semester. Students had their own E-mail address registered at the Computer Center. In my English classes, students' responses to this project were very positive. Students were divided into five groups so that each group would give their presentation on the profile introduction of each interviewee in the video.

Students in each group got extensive practice in reading and writing in English and had a chance to develop their language skills by getting information necessary for giving presentations from the Internet Web-sites.

Effect of the E-mail Exchanges

1. To provide students with chances to practice communication in English, thus resulting in an increase in their English communicative skills, both written and oral, while dealing with the Internet-related tasks.
2. To enable them to expand their personal scope of life by learning through the Internet different values in comparison with their own.
3. To encourage them to see things more with international points of view.
4. To enable them to attain confidence in expressing themselves.

Results

The survey given to students at the end of the semester shows their attainments as follows.

Table 2. Listening Comprehension on Video (%)

		Excellent	Good	Fair	Poor
1.	Effects of Video Listening	23	57	18	2
2.	Familiarity with listening activities	18	67	14	1
3.	Context for English language	16	63	20	1
4.	Background cultural information	26	62	11	1
5.	Memorable and motivating factors	23	52	24	1
6.	Part of contemporary life	18	65	16	1
7.	Video adds variety to the classroom	20	57	20	3

n = 500

Other comments:

- Video watching is a great fun.
- It is easier to understand English.
- It's a good activity to understand the different cultures.
- It's interesting to know how people in other countries think.

Table 3. Giving Presentations (%)

		Excellent	Good	Fair	Poor
1.	Make preparations in a group	17	57	24	2
2.	Group-works	22	46	31	1
3.	Give presentations in a group	10	45	43	2
4.	Preparation for giving presentations	20	48	30	2
5.	Self-evaluation	14	41	41	4

n = 500

Other comments:

- Making preparations before giving presentations is very important.
- Group-work is well-done.
- It's nice to cooperate with each other in giving presentations.
- It is a good practice to speak before the audience.
- It is effective to improve our speaking ability.
- The quality of our presentation has been improved.
- It is difficult to give presentations.
- I am nervous. I am at high tension.

Table 4. The Internet Related Work (%)

		Excellent	Good	Fair	Poor
1.	The Internet experiences	21	20	28	31
2.	English learning by the Internet	55	34	11	0
3.	Word processing	29	54	16	1
4.	Computer operating	36	38	20	6

n = 500

Table 5. CNN Web-site Reading (%)

		Excellent	Good	Fair	Poor
1.	Reading CNN web-sites	24	55	20	1
2.	Reading articles on Nobel Peace Prize	29	53	18	0
3.	Understanding the web-site articles	17	43	37	3
4.	Summary writing	9	50	40	1
5.	Giving presentations	17	40	42	1

n = 500

Table 6. E-mail Writing (%)

		Excellent	Good	Fair	Poor
1.	E-mail exchanges	25	39	35	1
2.	E-mail writing	12	38	46	4
3.	Sending E-mail messages abroad	35	37	25	3

n = 500

Other comments:

- It is a fun for me to practice writing E-mail messages.

- E-mail exchange is motivating.
- E-mail message exchange is the short cut to mastering English.
- It's very interesting to open the different web-sites.
- It's interesting to read the www- articles about foreign countries.
- It takes me much time to get used to computer processing.
- It's great fun to open the web-sites abroad.
- I like the Internet English class.

These results suggest important pedagogical implications for promoting the development of students' communicative skills.

Conclusion

We are in an age of rapid technological development. Computers will be able to produce acceptable speech patterns and will provide another means of interacting with the video/computer screen. Authenticity for language-teaching video must take into account the needs of students to focus on reactions to what are important for language learning. Video production as well as creating web-sites on the Internet is full of exciting challenges. The next challenge is to produce "authentic" material which will provide an effective and satisfying response in the classroom. It is essential to pursue a way forward to further development in multi-media equipment and software in order to provide materials to meet the needs of students to improve their communicative competence in English.

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Appendix 1

Syllabus for Integrated Multi-media English Class

Class	Integrated English for Multi-media
Students	2nd Year: 40 Students
Aims	<ol style="list-style-type: none"> 1. To let the students develop communicative ability in English 2. To encourage the students to foster a positive attitude toward communication 3. To let the students understand intercultural communication
Activities	<ol style="list-style-type: none"> 1. Listening Comprehension by watching video material 2. Speaking Drills in pairs as post-video-viewing activities 3. E-mail Writing Drills as post-video-viewing activities 4. Reading Web-Pages to get more information for intercultural communication 5. Giving Presentations in groups
Methods	<ol style="list-style-type: none"> 1. "Multimedia Classroom" CALL, PC, Analyzer, VTR, VID, CD, LD, etc. 2. 90 min. class, Once a week, 13 weeks a semester
Videos	<ol style="list-style-type: none"> 1. Impressions of Britain 2. Guide to Britain (BBC)
Web-sites	<ol style="list-style-type: none"> 1. CNN: http://www.cnn.com 2. UK Guide: http://www.cs.ucl.ac.uk
Procedure	<ol style="list-style-type: none"> 1. Pre-Listening..... Overall Understanding about Britain <ol style="list-style-type: none"> a. Video viewing before listening b. Tape-recording c. Checking key-terms in the interview 2. While Listening.... <ol style="list-style-type: none"> a. Checking topics in the video interview b. Matching items with what is heard c. Multiple-choice questions d. True or false questions e. Gap-filling f. Questions and Answers 3. Post-Listening... <ol style="list-style-type: none"> a. Role-play / simulation in pairs or groups b. Dictation 4. Assignments <ol style="list-style-type: none"> a. Transcription

- b. Summary Writing
- c. Preparation for giving presentations about profiles

2nd Period

Procedure 1.

Review

- a. Summary presentation of Dina's profile in groups
- b. Summary presentation of Ute's profile in groups
- c. Giving presentation of Sina's profile in group

2. E-mail writing

- a. Self-introduction in English in pairs
- b. Exchanging E-mail address in pairs
- c. Opening the Internet Netscape "Mail Message" site
- d. Input the E-mail address of the partner in the "Mail To:"
- e. Input the E-mail address of the instructor in "Cc:"
- f. Input the mail message in English
- g. "Send" it

3. Post activities a) Open Web Pages as a reference for background information

Manchester University: <http://www.man.ac.uk>

Oxford University: <http://www.ox.ac.uk>

UK guide: <http://www.cs.ucl.ac.uk>

4. Assignments

- a. E-mail writing to Dina, Berna, Ute, Sina, or Gregory

Appendix 2

Samples of E-Mail Writing

Date: Fri, 25 Sep 1999 11:10:02 +0900

Hello Sina,

Nice to meet you! My name is DAISUKE. My overseas friends call me DAI. I'm a university student in JAPAN. My major is chemical engineering. During my English class, our teacher Ms Setsuko Hirao showed us a video about impressions of Britain, and I watched your interview.

It appears that the night life in Britain is very exciting and diverse. I am interested in ENGLAND. I'd like to study English there. I know England is a brilliant and lovely place.

I visited England one month ago. I often went to pubs just like you. I always drank "CIDER". It's sweet beer. I also like tuna sandwiches.

Prof.HIRAO told me you would kindly introduce your student to me. So please introduce me a beautiful girl penpal!. I'd like to exchange E-mail messages with her.I have never been to Switzerland. So I'd like to know about Switzerland. It's a great pleasure for me if you kindly introduce me to one of your students. I am looking forward to hearing from you and your student.

WITH BEST WISHES

DAI

Date: Sat, 17 Oct 1999 21:01:01 +010

Dear Dai

Thank you for your message. I have just come home from my holidays in Italy.

I was lying on the beach and relaxed from teaching. You will get your answer for the first e-mail later. Please send me your address. I'll try to find you a female penfriend. But our students usually do not have e-mail; so they have to write back by good old post-mail.

Please write more details about yourself. How you live, how you spend leisure time, how life differs from life in Europe etc.

Best wishes

Sina

Interactive Web Pages for Cross-Cultural Learning

Seiko Oguri

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Abstract

This presentation will demonstrate how the learning environment can be enriched for ESL students by using an interactive web site. As a part of collaborative learning projects using the Internet in the field of ESL education, the Japan Today Trivia Quiz project was first designed in 1998. The purpose of the project was to provide students a global framework where students can experience cross-cultural communication in English. This project attempts to optimize the interactive feature of the WWW and depends largely on the collaboration from ordinary people participating from different countries. The focus of incorporating the Internet is shifted from net surfing or email exchange to inter-cultural communication with people from different parts of the world.

Internet-Based Collaborative Learning

The Internet enables EFL learners to expose themselves to authentic language and communication in real-life situations. This project attempts to optimize the interactive features of the World Wide Web. In 1996, Professor Shuji Ozeki and the author initiated Internet-based collaborative learning projects at Chubu University's Language Center. Two years later, the Japan Today Trivia Quiz was developed. The quiz was a project developed to cultivate students' writing skills, specifically in the area of constructing explanations.

Other aims included enhancing students' awareness of their own culture, building a foundation for understanding other cultures and increasing interest toward other languages, including English.

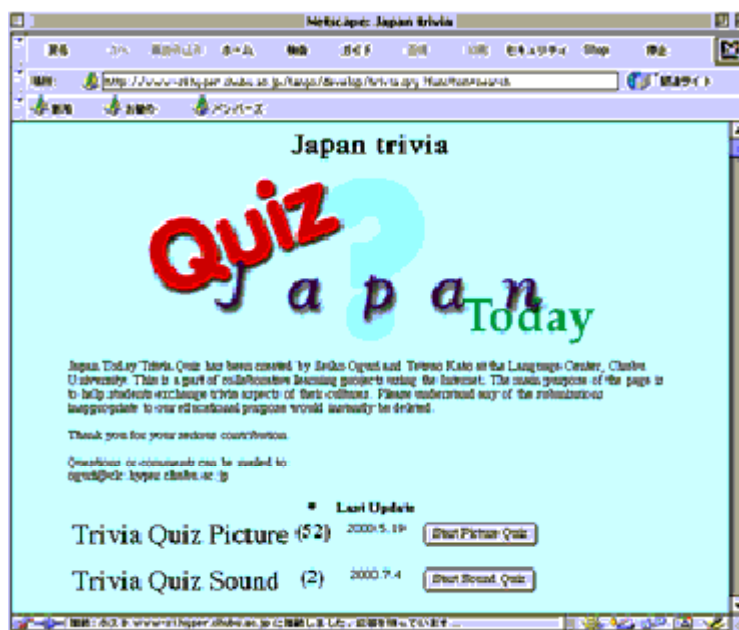


Figure 1. Japan Today Trivia Quiz front page

Quiz Writing Project

The first task for students is to select one quiz topic each. Next, and most importantly, they are to observe their culture as objectively as possible. They are instructed not to select topics which would likely be dealt with in publications, for example, traditional habits, events or customs. Instead, the students are told to choose topics from items or events in their daily lives. The author assists them in finding things they may take for granted or think they thing are "too ordinary". The students and instructor discuss the topic via e-mail. After topics are agreed upon, each student goes on to prepare quiz questions.

Interaction on the Web

When the quizzes are ready, the instructor puts them onto the database established for the project, and publishes them on the web site. The site is controlled to accept quiz postings only from the instructor. Each quiz consists of either a photo or sound file plus a brief question.

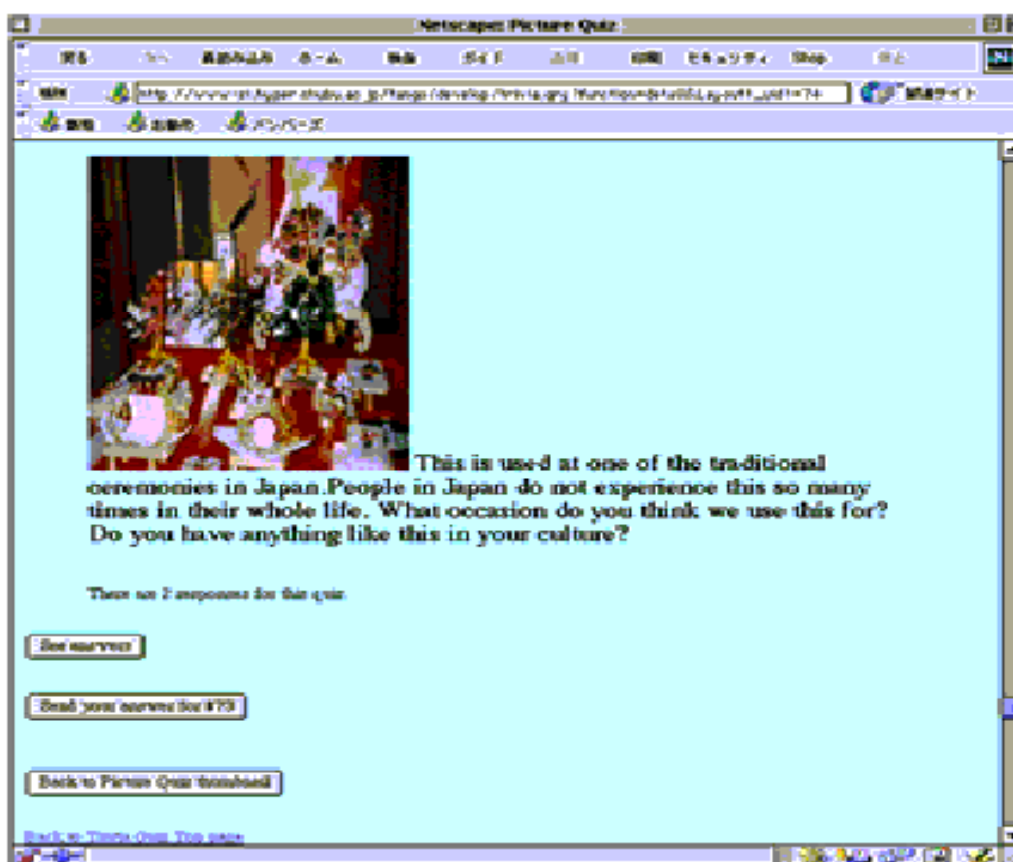


Figure 2. A quiz page

The process of making a quiz may seem easy, but for most students, this can be the most time consuming part of the project. They learn how to make the quizzes interesting for people from other cultures. Though the posting of quizzes is restricted, responses are welcome from anyone in any part of the world who is interested in responding to the questions. The instructor helps find quiz participants, preferably people with a non-Japanese cultural background, by posting invitations on relevant mailing lists or newsgroups. Submissions of "answers" are reflected on the web page in real time.

Back to Fictive Quiz Top page

Quiz #: 73

Your name:

Your nationality:

Email:
required but not shown

Your answer:

Clear Send

Figure 3. Response submission page

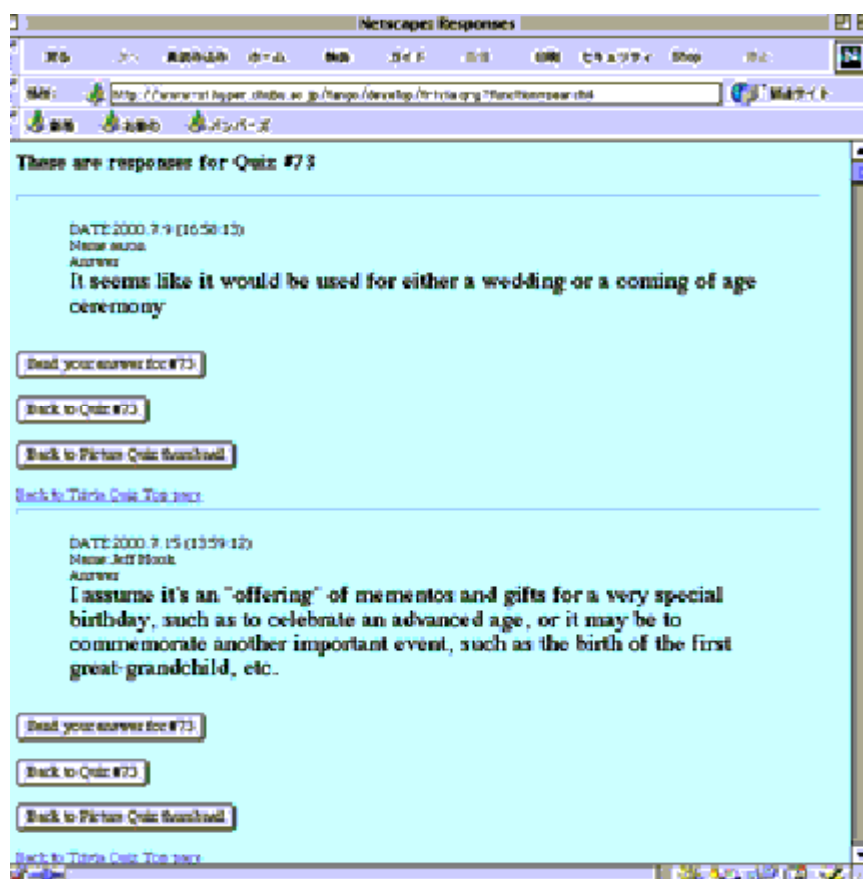


Figure 4. Responses listed on the web page

Writing about Their Culture

While waiting for responses, students start to write explanations for the quiz items. Explanations are expected to be concise but should sufficiently lead to a better understanding of Japanese culture. From the responses posted on the web site, students not only learn English expressions, but also realize how much of every day Japa-

nese culture is understood or misunderstood by people from other cultures. A considerable amount of writing instruction for the project is given via a local newsgroup which has been set up for EFL classes and is only accessible on campus. The newsgroup has enabled students to write in an open forum. However, the number of students who work at home using e-mail has increased rapidly. Starting in the fall semester of 2000, the author also started using the class mailing list in order to enable students to work from anywhere. All the e-mail sent to the mailing list is published on the web so that students can still have an opportunity to trace and learn what their peers have written.



Figure 5. Students' explanation page

Database System Supporting the Web Page

Trivia Quiz Project consists of Web Server, CGI Application, and Database software. Web Server software employed is WebSTAR running on Power Macintosh. CGI Application is made with Tango for File Maker Pro and Communicate with File Maker Pro database. There are two components in this quiz system. One is publication

CGI for the quiz panelists and the students. The quiz panelists can see the trivia quiz and send their responses through web interface. The students on the other hand can read panelists' submissions by publication CGI, using their own browsing software. Another component is administration CGI for the instructor. The instructor can control the whole data of the trivia quiz site. For example, the instructor can publish the students' quizzes and responses on the web page. If she wishes to delete any of the submissions made, she could do it from anywhere, using browsing software. Using Macintosh for Web Server is easy because all the interfaces are given in GUI and

it is familiar interface than using UNIX system for Web Server. The biggest advantages of this system is publication and administration in real time. Also, if we use a web interface as a communication tool, all the users do not have to be familiar with the background system. All they have to know is the URL of site.

Interaction for More Learning

Besides strengthening their writing skills, the experience of preparing cultural quizzes and explanations helps students develop their cross-cultural awareness. At the beginning, students find it difficult to select accurate expressions for their explanations. As they go on, they find that constructing an explanation is not only a matter of using expressions and vocabulary correctly. They are also challenged to improve upon the content of their explanations. When the explanations are almost finished, the instructor publishes them on the web. If the audience gets interested, they send us more feedback on the web. Students' focus is then shifted from writing to cultural comparison. In some cases, considerable communication takes place between students and quiz participants via e-mail. The author continues to search for better ways to allow EFL learners to learn more from interaction on the Internet using web sites like this.

School lunch at elementary school

1998105 Keoru Teruoka



Feedback from people overseas

From: Carol Orlandi
 Organization: Milwaukee Public Schools
 This is an interesting page - kids would like this international comparison, as they usually list lunch as their favorite part of school. You will find our school lunch menu at:
<http://ftp.milwaukee.k12.wi.us/departments>
 (won't be updated until we start up again Aug. 24)



From: Klara Ross
 Hello, Keoru.
 I enjoyed your webpage about the school lunches. Sorry, I do not have any photos. (And even if I had photos, I don't have a scanner.)
 At American schools, lunches are cooked and served by paid employees of the school. When I was in elementary school (about 45 years ago), a few students who were both poor and also too stupid to learn anything worked part-time in the cafeteria, but this practice is forbidden now. Some of the modern high schools have very fancy cafeterias, with three choices of entree, including pizza, or taco. My goodness! When I was in school, we had cornbread and weiners every Monday, Wednesday, and Friday. On Tuesdays and Thursdays we had weiners and cornbread. The general practice is that a student has to pay for his meal. The amount of money is very small, though. Some city schools also offer breakfast. Kids who come to school without breakfast are almost always poor, so the breakfasts are served at no charge. (By the way, are you a male Keoru or a female Keoru? My daughter's name is Keoru. But I believe Keoru can be either male or female.)

Figure 6. Students' report on the feedback

Toward More Collaborative Learning

This project will be rearranged next term to make it more diverse and more collaborative. The next phase of the project will reverse the role of the participants; participants from other countries will present quizzes of their cultures and our students will be respondents. The project will continue exploring the possibilities to allow participants to learn more from the interaction at the web site.

Intercultural Understanding: Factors Influencing Transculturation and Ambiguity Tolerance in a Study Abroad Program

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Abstract

The purpose of this study is to examine the effects of students' experiences in a study abroad program. In particular, my discussion will focus on their changes of intercultural understanding, transculturation, and ambiguity tolerance after the study abroad program. Two types of questionnaires were administered to 230 university sophomores before and after the study abroad program. The first questionnaire was designed to measure variances in the students' intercultural understanding and transculturation. The data was analyzed by factor analysis. The analysis extracted five factors among 24 questionnaire items. Six items proved to be unsuitable for inquiring into intercultural understanding and transculturation. The second questionnaire was designed to measure levels of students' ambiguity tolerance. The results of changes in the five factors and ambiguity tolerance are discussed. Suggestions for future research are also discussed.

Introduction

A growing number of students have been participating in study abroad programs in order to improve their communication skills in English. Such programs are a recent trend in education and many universities are now creating unique overseas experiences. The Asia University America Program (AUAP) is a five-month study abroad program in the United States designed to expose students to spoken English and deepen their understanding of another culture. Over 7,000 students have taken part in the AUAP since the pilot program in 1988. Although many studies show that students' scores in English proficiency tests such as TOEFL increase significantly after a study abroad program as compared to those in a control group, little research has been conducted to examine the effect of students' intercultural understanding, transculturation, and ambiguity tolerance.

Intercultural understanding is defined as objectively understanding and respecting differences and similarities between one's own culture and different cultures (Ishii, 1997). This means that people need to understand and respect not only the different cultures but also their own cultures. Transculturation involves the transcendence from a narrow monocultural situation into bi- or multi-culturalism (Iwama, 1991). Through this process the individual embraces both (or all) cultures without rejecting either. In other words, transculturation describes a stage where the individual reaches a level that s/he is aware of cultural prejudices or stereotypes and has overcome the idea of ethnocentrism. Chapell and Roberts (1986) define ambiguity tolerance as "a person's ability to function rationally and calmly in a situation in which interpretation of all stimuli is not clear" (p. 30). According to Imagawa (1981), there are many ambiguous situations in our daily lives. While some people perceive ambiguous situations as psychological discomforts or threats, others don't care about them at all. This reflects individual differences of cognitive tolerance toward ambiguities. Ambiguity tolerance may have a great influence on students' processes of intercultural adjustment because they have to deal with many ambiguities in the study abroad program such as different languages, customs, and beliefs.

The purpose of the study is to examine the effects of students' experience in the AUAP and the changes of their intercultural understanding, transculturation, and ambiguity tolerance after the AUAP.

Method

Subjects

The subjects were 230 university sophomores (male: 97, female: 133) who participated in the AUAP.

Period in AUAP

Below are the universities and the periods that students attended the AUAP. The students were divided into each university.

Western Washington University: September 23, 1997 – February 19, 1998

Central Washington University: September 19, 1997 – February 15, 1998

Eastern Washington University: September 15, 1997 – February 11, 1998

Boise State University: September 5, 1997 – February 1, 1998

Procedures

Two different types of questionnaires were administered to 230 university sophomores before and after the AUAP. The first questionnaire (Questionnaire A) designed to measure variances in the students' intercultural understanding and transculturation has twenty-four questionnaire items that were selected from previous studies on the same topic. The second questionnaire (ATS-IV developed by Imagawa) was designed to measure the level of students' ambiguity tolerance. The ATS-IV was chosen because it was demonstrated to have high validity and reliability.

Analyses

The data of Questionnaire A was analyzed by factor analysis. In order to examine the differences of factors in Questionnaire A and ambiguity tolerance in ATS-IV between Pre- and Post-AUAP, a *t*-test was performed. Subjects indicated their reactions to each questionnaire item using a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree." SAS statistics package for Windows was used for the statistical analysis.

Results

In order to examine the appropriateness of the questionnaire items in Questionnaire A as a means of measuring intercultural understanding and transculturation, factor analysis was employed. The data was analyzed by factor analysis that extracted five factors among 24 questionnaire items. Six questionnaire items of the 24 questionnaire items were excluded from Questionnaire A because they didn't belong to any factor. Table 1 shows the result of a varimax rotation. The questionnaire items with factor loading of .40 and above are displayed. Table 2 shows the questionnaire items that belong to the five factors.

Table 1. Questionnaire Items with Factor Loading of .40 and above

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
A24	0.8690	0.0282	-0.0488	0.1287	0.0256
A23	0.8613	0.0432	-0.0037	0.1098	0.0311
A22	0.8086	0.1081	0.0559	0.0811	0.0516
A5	0.3878	0.0942	0.3027	0.1896	0.3006
A15	-0.0640	0.5997	-0.0662	-0.0591	-0.0034
A9	0.1057	0.5265	0.1210	0.0396	0.3189
A14	-0.0079	0.5010	0.0754	0.0102	0.0539
A13	0.0605	0.4834	0.0226	0.0209	0.0666
A18	0.1261	0.4946	0.0724	0.2150	0.0548
A17	0.1030	0.4190	-0.0069	0.0596	0.1252
A16	0.1519	0.3276	0.0673	0.2507	0.2541
A12	-0.0583	0.2829	0.1307	0.1656	0.0898
A4	0.0793	0.0774	0.7666	0.0298	0.0723
A3	-0.0545	0.0305	0.6695	0.1494	-0.0858
A2	-0.0442	0.0561	0.5962	0.0318	0.1338
A6	0.1704	0.0462	0.4555	0.0489	0.2572
A20	0.0575	0.0437	0.0657	0.7769	0.1020
A21	0.0990	0.0030	0.0084	0.6761	0.0332
A19	0.1721	0.2425	0.0986	0.3306	0.0311
A1	0.0798	0.1760	0.1357	0.2686	-0.0526
A11	-0.0158	0.0404	-0.0612	-0.1836	0.6073
A10	0.1034	0.2025	0.1213	0.1897	0.5726
A7	0.3809	0.1708	0.2458	0.0182	0.4748
A8	-0.0190	0.1071	0.0917	0.0853	0.2840
Eigenvalue	2.5443	1.9158	1.8687	1.5702	1.4100

Table 2. Questionnaire Items of Five Factors

Factor 1 (Motivation of Learning English)
A24. I'm interested in working in foreign countries in the future.
A23. I'm interested in learning in foreign countries in the future.
A22. I'm interested in working in English in the future.
Factor 2 (Transculturation)
A15. I view which country is more superior to the other when I compare Japanese culture to the foreign culture.*
A9. It's annoying to learn how to associate with foreign people and follow their rules.*
A14. When I observe the actions and speech patterns of a person from a particular country, I don't consider it to be typical of all people in that country.
A13. I don't interpret foreigners' customs to be similar to Japanese.
A18. I feel neither a superiority complex nor an inferiority complex with foreigners when I speak with them.
A17. I don't think that it's impossible to understand foreigner's values even though people think mainly about the values that support their own culture.
Factor 3 (Understanding and Interests in Own Culture)
A4. I'm interested in maintaining traditional Japanese culture.
A3. I understand Japanese culture well.
A2. I'm proud of Japanese culture.
A6. I'm interested in the differences between Japanese culture and foreign cultures.
Factor 4 (Independent from Group Consciousness/Self-Reliance)
A20. I am not afraid of doing things differently from others.
A21. I state my opinion clearly even if it is different from other's.
Factor 5 (Interests in Different Culture)
A11. I think that it is impolite to foreigners if we maintain Japanese etiquette in foreign countries.
A10. I think that there are still things to learn from foreign countries, though there are good things in Japanese culture and life.
A7. I'm interested in becoming a friend of foreigners.

(* reversal items)

Factor 1 was named as "Motivation of Learning English" because it contains questionnaire items that ask reasons for learning English in the future. Items in Factor 2 indicate "Transculturation" because it describes a situation which avoids cultural stereotypes and prejudices caused easily from a single cultural situation and overcomes the idea of ethnocentrism. Factor 3 shows understanding and interests in Japanese culture and was named "Understanding and Interests in Own Culture." Factor 4 was named as "Independent from Group Consciousness/Self-Reliance" because items refer to thinking and acting independently. Factor 5 was named as "Interests in Different Culture" because the questionnaire items ask people's interests in different culture.

The change of evaluation value of five factors that had been obtained from factor analysis and ambiguity tolerance were examined by *t*-test in order to see the differences between Pre- and Post-AUAP.

Table 3. Comparison of Evaluation Value of Five Factors and Ambiguity Tolerance between Pre- and Post-AUAP

Factor	Pre-AUAP Mean (SD)	Post-AUAP Mean (SD)	<i>t</i> value
Factor 1	3.95 (1.00)	3.87 (0.94)	-1.42ns
Factor 2	2.38 (0.60)	2.52 (0.60)	3.04**
Factor 3	3.34 (0.71)	3.51 (0.68)	3.52***
Factor 4	3.22 (0.95)	3.61 (0.93)	6.28***
Factor 5	4.39 (0.59)	4.36 (0.57)	-0.66ns
A-T	16.84 (18.81)	120.60 (22.00)	2.79**

*** $p < .001$ ** $p < .01$ * $p < .05$

Discussion

There was a significant difference in Factor 3 (Understanding and Interests in Own Culture) between Pre- and Post-AUAP ($p < .001$). The change of Factor 3 indicates that students became more aware of Japanese culture after the AUAP. According to Yoshida (1990), the more Japanese bilinguals acquire the English language system in the United States, the more they feel differences between Japanese and Americans and raise their self-consciousness as Japanese. This might be the case with the AUAP students: They realized the differences between Japanese culture and American culture through the AUAP and raised their consciousness to Japanese culture.

There was also a significant difference in Factor 4 (Independent from Group Consciousness/Self-Reliance) between Pre- and Post-AUAP ($p < .001$). This means that the students—through their experience in the United States, a country which values Individualism—were able to overcome the psychological discomfort or threat created by differing from others.

There was a significant difference in Factor 2 (Transculturation) between Pre- and Post-AUAP ($p < .01$). The statistical change of Factor 2 indicates that the students became more aware of the stereotypes and prejudices which easily happen in a single cultural situation and tried to avoid the idea of ethnocentrism.

A significant difference was found in ambiguity tolerance between Pre- and Post-AUAP. The students' levels of ambiguity tolerance increased through the AUAP experience. In other words, they became more tolerant toward cultural ambiguities through the study abroad program.

It is interesting that no significant difference was observed in Factor 1 (Motivation of Learning English) between Pre- and Post-AUAP. The students might have lost their interests in developing their careers in English when they had communication problems with American students and realized that it's not so easy to live and work in the United States. There was also no significant change in Factor 5 (Interests in Different Culture) between Pre- and Post-AUAP. These results may reflect a gap between what they expected prior to going to the AUAP and what they actually experienced in the AUAP.

Conclusion

Ultimately, there are four points that are revealed in this research. First, the levels of students' ambiguity tolerance have increased through the study abroad program. This suggests that students have become more tolerant towards sociocultural differences between Japan and the United States through the AUAP. Second, the students' understanding and interests in their own culture have been deepened by the program. Third, the students have

overcome their anxiety and fear of doing unique things through the study abroad program. Fourth, the students have become more aware of stereotypes and prejudices against other cultures and tried to avoid the idea of ethnocentrism.

It is interesting that the students became more aware of their own culture after the AUAP when there was no significant difference in Factor 5 (Interests in Different Culture) between Pre- and Post-AUAP. However, this is just the tip of the iceberg to understanding the effects of a study abroad experience. In the future, it is necessary to make a more valid questionnaire that can more effectively measure intercultural understanding and transculturation in order to more fully understand the effects of students' experience in a study abroad program.

Note

This paper is a revised version of "A study of transculturation and ambiguity tolerance in a study abroad program" in *Language Laboratory* 35.

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International Student Exchange and Intensive Chinese Courses in China

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Abstract

Globalization in education has been one of the most crucial issues today. The importance of communicative competence has been realized in the world and the rapid advance of information technology has drastically altered the environment for foreign language teaching.

Making use of newly developed technologies in communication has been on a great move. For example, E-mail exchange programs by using the Internet are popular among universities as well as high schools, and teachers are involved in the production of the authentic teaching material on the web sites. Students exchange programs between sister universities abroad and the intensive language courses for students have been introduced. These programs by means of the efficient use of multimedia are mainly for teaching English.

It goes without saying that not only English but also other foreign languages will be important for the global communication. Cultural awareness between people all over the world is essential for language learning.

This presentation will be focused on the international student exchange program between Nankai University in Tenjing, China, and Aichi University in Japan, together with the intensive Chinese courses and field works in China which have been progressively under way since 1997.

Aims

The aims of the programs in this presentation are:

1. to improve students' Chinese proficiency, the language other than English, for intercultural communication
2. to promote students' cultural awareness in China
3. to encourage students to exchange opinions with Chinese students across cultures
4. to report the case study on students' field work in China
5. to evaluate students' benefits of Chinese language learning and culture understanding, and
6. to suggest the further pedagogical implications for language teaching

Historical Background

Aichi University was founded in 1946, originated in Dobun Shoin University in Shanghai established in 1901. Since 1950 Aichi University has concluded the General Agreement for Academic and Student Exchange Programs between universities in the United States, Britain, France, and China in order to promote students' language learning as well as the cultural awareness.

Aichi University has sister universities in China as follows:

1. Nankai University, Tenjing
2. Beijing University, Beijing
3. Beijing Foreign Language University, Beijing
4. Fudan University, Shanghai
5. Shanghai Foreign Language University, Shanghai
6. Shanghai Kotu University, Shanghai
7. Sian Kotu University, Sian
8. China College of Technology, Beijing

Methods

Every year 200 freshmen of Faculty of Modern Chinese are sent to China for 4-month-course in the second semester, after having learned Chinese language and culture by means of the Internet and the computerized Chinese language learning system in the first semester in Japan. In the meantime students exchange ideas with the Chinese students by exchanging e-mail messages.

It is the first experience for students, who have been studying English for six years at high schools, to learn Chinese and study abroad in China. Therefore, students are highly motivated to study Chinese as a new second foreign language.

The presenter visited Nankai University in November, 1998, staying with Aichi University students at Nankai Aidai Kaikan (Joint Research Institute for Nankai University and Aichi University) for two weeks.

Programs in China

Intensive Chinese Courses Compulsory

1. Students: Compulsory for 200 Freshmen, Faculty of Modern Chinese
2. Period: Sept. 4 - Dec. 23 (4 months)
3. Sent to: Nankai University, Tenjing
4. Class: 10 Classes
5. Curriculum:
 - a. Chinese Language
 - b. Chinese Culture
 - c. Field Work

Study on Chinese Culture

1. Date: Monday and Wednesday
2. Course:
 - a. Calligraphy and Art
 - b. Dance and Drama
 - c. Musical Instruments

Field Work

1. Place: Tenjing City, China
2. Period: 3 weeks
3. Fields:
 - a.. Marketing and Finance
 - b. Schools and Education
 - c. Factories and Social Life
 - d. Marriage and Family Life
 - e. Women Status and Occupation

Cultural Exchange Meeting & Discussion with Chinese Students

1. Place: Nankai University, Tenjing
2. Date: The last week of the course in December
3. Programs:
 - a. Oral Presentation and Discussion
 - b. Performance of dramas, dancing, musical instruments, aikyokuken, etc.
 - c. Exhibition of art, calligraphy, etc.

Table 1. Time Schedule for Language Learning:

Period	Time	Mon	Tue	Wed	Thurs	Fri
1-2	8:00 - 9:40	IR	L	SC	ER	IR
3-4	10:00 - 11:40	SC	ER	IR	L	SC
5-6	14:00 - 15:40	CC	TC	CC	TC	Exam
7	16:00 - 16:50	Taikyokuken		Taikyokuken		Taikyokuken

IR = Intensive Reading SC = Spoken Chinese
 ER = Extensive Reading CC = Chinese Culture
 L = Listening TC = Things Chinese

Strategies for Integrating Language Learning into Cultural Awareness

Procedures

1. Listening comprehension
2. Reading
3. Writing
4. Giving presentations
5. Performance of Chinese dramas, Chinese dancing, Chinese music, calligraphy, Chinese traditional sports, etc.

Credit-Transfer-System

1. 8 credits will be given for the whole course of language learning.
2. 4 credits will be given for the course of Chinese culture.

Language Examinations

Language examinations will be given every other week in 4 months: i.e. eight times during the whole course. Those who have failed in the exam must take supplementary lessons and try to take the exam again.

Teaching staff

Thirty Chinese professors and instructors at Nankai University teach Chinese language, Chinese culture and things Chinese for Aichi University students.

Tutor System

Students can ask Chinese students of Nankai University to be their own tutor to have better understanding of their lessons at their own expenses. As a whole, all students make good use of merits of the tutor system.

Facilities in Tenjing

Nankai Aidai Kaikan, a newly built five-storied-building, has 10 classrooms, library, lecture hall, auditorium, catering system, dinning room, administration office, clinic office, 100 accomodation rooms (twin rooms), etc. Such facilities built on the Joint Research Institue for both Universities, in China and Japan, are not found in Japan except our case of Nankai University and Aichi University.

Effects of Intensive Chinese Course

1. It provides students with chances to practice Chinese communication both written and oral.
2. It enables students to expand communication both written and oral.
3. It enables students to expand personal scopes of life.
4. It encourages students to see things more with international points of view.
5. It lets students have confidence in expressing themselves for language learning.

Program for Field Study

The third year students can apply for the field study program and those who have passed the exam for membership will be able to have an opportunity to join the field study in China.

1. Students: 50 students (Juniors) Faculty of Modern Chinese
2. Period: Aug 1-Aug 31 (1 month)
3. Place: Beijing University, Beijing, China (1999)
Fudan University, Shanghai, China (2000)
4. Group: 10 Groups

Time Schedule for Field Study:

- 1st week: Survey on
- a. Marketing and Finance
 - b. Schools and Education
 - c. Factories and Management
 - d. Environment and Social Life
 - e. Marriage and Family Life
 - f. Women Status and Profession
 - g. Environment Issues
- 2nd and 3rd week: Field Study and Writing Reports
- 4th week: Oral Presentation and Discussion with Chinese students

Effects of Field Study

1. It provides authentic material for language learning.
2. It broadens the students' view of life.
3. It is good for expanding the students' outlook on the world.
4. It provides a glimpse for Chinese culture and way of life.
5. It is a means of globalization.

Findings

The result of students' questionnaire reveals that they have learned how important to communicate with each other beyond cultures. They have had mutual understanding with Chinese students by exchanging ideas and opinions both in Chinese and English. All of the students are shocked to find that Chinese students are far better at English than they are.

Table 2. Results of Aichi University Student Survey

		Good	Fair	No Good
1.	Chinese People	100	0	0
2.	Chinese Dishes	35	40	25
3.	Speaking Chinese	29	55	16
4.	Motivation for Learning Chinese	100	0	0
5.	Culture Understanding	25	55	20
6.	Life in China	57	37	6
7.	Taikyokuken	29	53	18
8.	Chinese Tutors	38	49	3
9.	Travel in Mongolia	17	41	42
10.	Health Condition	18	37	45

n = 200

Conclusion

According to the “Japan Almanac” published by Asahi Shimbun the following facts and data are shown:

Table 3. Japanese Students Abroad as of 1995

Total:	160,000
In U.S.A.:	82,000
In China:	1,000

Table 4. Foreign Students Studying in Japan as of 1997

Total:	51,000
From China:	43.7 %
At Aichi University:	16%

Table 5. Foreign Students Studying in Nankai University as of 1997

Total from 40 countries	750
From Aichi University	200

The project is meant for the global communication and cultural awareness by means of Chinese, the language other than English. Most of the students were highly motivated to study abroad in China and proved to become good at listening, speaking, reading, and writing Chinese owing to the 4-month-course of intensive language learning. After coming back to Japan, students are going to take lectures taught all in Chinese by native professors of Chinese in the second year classes.

The questionnaires given to students showed how effective the intensive language courses were. Students found that their oral presentations and discussion with Chinese students regarding their field works made in China were so exciting, and instructive. They enjoyed talking with Chinese students about various topics they had surveyed in Tenjing and Beijing. They are eager to learn much about China and some students will apply for the Field Study Course in their third grade. Their written reports titled “Tenjing Diary” and “Life and Field Work in Beijing” have been published by International Exchange Bureau, Aichi University.

In short, the students’ positive and enthusiastic attitudes towards the intercultural communication will surely lead to the mutual understanding of different cultures and will contribute to the borderless globalization in education.

An Introduction to Streaming Multimedia: Utilizing Real-Time Resources in the Language Classroom

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Abstract

This paper will serve as a useful introduction to and review of Streaming Media. This powerful new medium of communication can be a valuable language teaching resource and tool. Relevant hardware and software concerns for viewing streaming files and for creating new materials will be addressed in user-friendly language that even new computer users will understand. Practical advice on classroom use includes an actual case study at a private Japanese technical university. The pros and cons of using Streaming Media will be examined. Finally, the future of this new technology will be discussed.

Introduction

Streaming media is one of the hottest new technologies available on the web right now. With streaming media, long download times are a thing of the past. You can watch video live or on-demand without waiting. Of course the system isn't perfect but the technology is getting better every day. With high speed internet connections becoming more popular, streaming media will soon become a household word. What is streaming media and how can it be a useful tool for language teachers? These questions and more will be answered in the following paper.

What is Streaming Media?

Streaming media can be defined as a sequence of moving images that are sent in compressed form over the Internet and displayed by the viewer as they arrive. Streaming media allows for on-the-fly playing of audio, video and animation files. In other words, the data is being sent to the user's computer and displayed as it is being sent. Using a browser plug-in or application, the user can now watch video-on-demand programs and even live images and sounds.

Compared to normal media

A few years ago, before viewing a multi-media file, the user had to download it to the computer's hard disk and then play it. These files were usually very large so downloading could take anywhere from a few minutes to several hours. The user was unable to view the file until it had been completely downloaded. With streaming media, the viewer can view the file while it is being sent to the computer. With streaming media, long download times are a thing of the past.

Basics of Streaming Media

In order to view the compressed streaming files, the user will need to be equipped with a player. The two most popular streaming players are: RealPlayer and Windows MediaPlayer. The following is a brief introduction to each player.

RealPlayer. The RealPlayer is one of the most popular streaming media players and is updated continually with improvements and new features every few months. RealPlayer7, the latest version, comes as a free version or relatively inexpensive pay version, although the difference in picture quality seems very slight. This viewer is very user-friendly and like most streaming media viewers resembles a television set with a screen and surrounding dials and settings. It comes with 150 pre-programmed Internet radio station settings, and many Internet TV news and specialty channels. The RealPlayer homepage is a valuable authentic English media resource featuring links to short films, cartoons, movie trailers and video interviews with famous actors and directors.

To download the free version go to the RealPlayer homepage (www.realplayer.com) and click the *Realplayer 8 FREE* icon near the bottom of the page. (Note: this may take some searching. Naturally the pay version has a more prominent icon!) Click *RealPlayer 8 Basic* on the next page to appear. A simple questionnaire will appear. An email address is required. At this point, it is possible to continue the process in Japanese if you wish by changing the language selection at the top of the page. Click *Download FREE RealPlayer 8 Basic*. Choose *Save to disk* when prompted and click *Download program*. This may take a few minutes to half an hour at the most. A message will appear when the download is complete. Go to the *RealPlayer* icon that has been placed on your desktop screen. Click it to install the program by following simple instructions which will appear. To use the RealPlayer, simply click on the icon and select an Internet radio or TV channel.

Windows MediaPlayer. If you use Windows, you may already have the Windows MediaPlayer installed on your computer ready to use. It is very similar in appearance and function to the RealPlayer viewer. The updated version is the Windows MediaPlayer 7 and can be downloaded from the Windows MediaPlayer homepage (www.microsoft.com/windows/mediaplayer/en/default.asp) by clicking on the *7 Player* icon and following the same basic steps outlined above. The separate Windows Media homepage (www.windowsmedia.microsoft.com) has a large selection of audio and video headlines including links to interesting educational site listings.

Creating Your Own Content. With the right tools, teachers may create their own content to be published on the Internet. The following is a very short procedure for creating streaming files for RealPlayer.

After videotaping the desired content, you will need to digitize the tape. For this you will need a video capture card. If you own a newer Mac, the chances are that you already have a video capture card built in. To see if you have one, turn your computer around and look at the ports. If you see a round port labeled "Video In" (probably with a yellow ring around it), you're in luck. Unlike Macs, most PCs don't have built-in video capture capabilities. You will have to purchase one and install it.

Remember, when capturing video, always use a computer with a fast processor. Windows users should use Pentium 133 or faster computers. Also capturing data requires a lot of disk space. You should set aside at least 2 GB for video capturing.

The next step will be to edit the video using a video editing program. Adobe Premiere is one of the most popular programs as well as Apple Final Cut Pro for Macintosh. The editing process will bring the file size down to a manageable level. This will be accomplished through the use of Codecs (abbreviation of COmpression / DECompression). Codecs can shrink a 30MB video to one as small as 80KB. The final step of the editing process will save the video into one of the basic movie formats (.AVI, .MPG, .MOV).

Once the movie has been captured and edited, it is ready for encoding. The encoding process will further compress the file so that it can be streamed. One of the most popular streaming media formats is .RM or .RAM which can be used by RealPlayer. The basic encoding program, RealProducer, can be downloaded from the RealNetworks web site at no charge. It will convert .AVI and .MOV files into the RealMedia format. It's a very simple, drag and drop procedure. Once the files are converted to .RM format, they are ready to be uploaded to the server for streaming.

Practical Application of Streaming Media

The practical application of streaming media in language education is still in its infancy. However the obvious benefit of integrating live and on-demand video and audio images can no longer be overlooked. Some of the applications of streaming media include: supplementary materials for listening, self-study programs, and as a supplement to distance learning programs. The web has become a cornucopia of audio and video images, that can be used for students learning a language. The availability of news, sports and entertainment programs is expanding at an exponential rate.

With the potential of streaming media in mind, let's examine a case study of an actual classroom. The following is a description of how streaming media was used in a project class at a private university in Japan.

Description of Project Class

Student Profile

The class, taught at a private Japanese university specializing in science and technology, was composed of twenty-six undergraduate environmental and mechanical engineering students, who had each completed the prerequisite amount of five semesters of general four-skills English instruction and basic grammar review. Being a purely elective course, the students had chosen it out of genuine interest and were especially motivated to participate. Interestingly, the class was nearly evenly divided between male and female students although female students made up only a fraction of the general student population. The students' lower to high intermediate reading and writing skills were slightly more developed than their listening and speaking ability.

The elective course which I designed, entitled Watching Science News on the Internet was intended as a topic-based content course incorporating an integrated four-skills approach with an added emphasis and the weaker areas of listening and speaking. The stated course objectives in the syllabus were as follows:

You will learn to identify the topic and main idea of a news story and discuss it in some detail.
You will be able to ask and answer questions about a variety of exciting science topics reported in the daily news. You will develop more active listening and speaking skills, and strategies for learning new vocabulary. You will be encouraged to pursue more independent learning.

The course took place over eighteen regular one hour class sessions, ending with a nineteenth specially designated self-check and course evaluation class period.

Teaching Methodology

A conscious effort was made to pursue a primarily top-down approach to language learning with an emphasis on the communication of ideas and meanings. As much as possible, I tried to focus the students' attention on the content of what they were saying and writing as opposed to merely the mechanical form. This meant giving feedback only on glaring surface level grammatical, lexical or phonological errors committed by the students in homework assignments or class activities. Priority in the use of error awareness techniques by the teacher was given to errors which interfered with or led to a breakdown in effective communication. However, this approach had to be balanced with the students' own desire to have all surface level errors corrected.

A key stated objective of the course was for the students to be "encouraged to pursue more independent learning." This meant making the class less teacher-centered by giving the students more responsibility for their own learning.

I also felt it was necessary to expose them as much as possible to authentic written and audio English texts that they would encounter on the Internet and in other media sources after graduating. It was carefully explained to

them that they would not be expected to understand one-hundred percent of the news stories presented to them, and that even native-speakers rarely had a one-hundred percent comprehension rate of a detailed news story containing specialized vocabulary and related background information.

By processing non-textual information such as pictures and graphs, drawing on their own subject knowledge, brainstorming in groups and making “mind maps”, creating and answering their own questions about each story, making predictions, identifying key words and guessing the meaning of new words from context they learned how to quickly identify the topic and main idea of a general science news story without being intimidated by the authentic, native-speaker level of the text and automatically throwing up an affective filter.

Each regular class contained the following stages:

1. Introduction to a general science topic (based on an on-line article assigned for homework after the first session).
2. Pre-listening activities (For example, brainstorming in groups, making or expanding “mind maps”, creating or expanding lists of questions about a particular topic).
3. Video and/or audio Internet news story on screen in class.
4. Comprehension check and feed-back.(For example, students write questions on the blackboard for other groups to answer. Attention is drawn by the teacher to surface level errors only if the question cannot be clearly understood by other groups).
5. Pair/group work discussion, activity or role play based on news story or related topic (For example, interview between a news reporter and scientist or group debate on the pros and cons of a topic such as nuclear power).

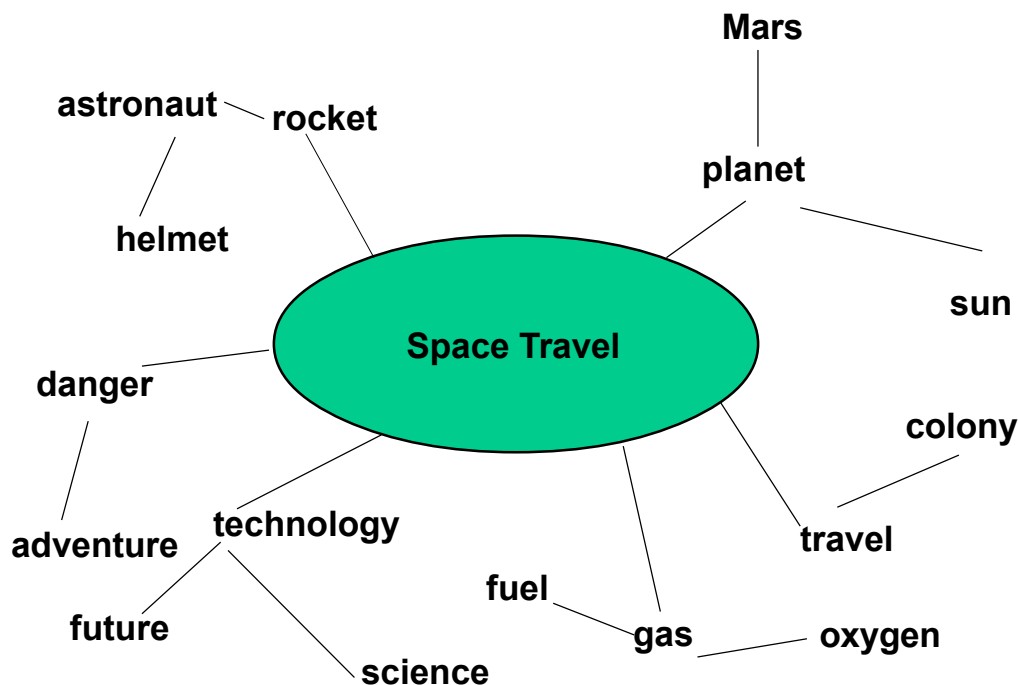


Figure 1. Sample mind map

6. Follow-up homework assignment. New on-line article assigned to read and prepare for following class. Once students have installed and are able to use a “streaming media” player, they are asked to view the video clip(s) embedded in the text of a story, write and attempt to answer their own questions about the information presented clip. Occasionally students are encouraged to vote on-line on various issues on the BBC site and to email in their opinions on selected topics.

Students were given a model worksheet to use when reading and/ or viewing news stories assigned for homework. It contained the following instructions:

1. Make a “mind map” (Figure 1) of vocabulary for the next topic. Look up at least seven new key English words in your dictionary that you would like to know. Mark word stress. (An example of such a mind map or clustering was provided using the topic of space travel and showing the branching web of related words around it).
2. Find the assigned homework article to read and video clip at the site www.bbc.co.uk/news and click with your mouse on “sci/tech” at the top of the main page. Next, scroll down the list to find the article and click on the title. Before reading the article and viewing the streaming media video clip, think carefully about the title and study any pictures or graphs. Try to predict what the article is about. Write down seven questions you have about the article.
3. Read the article once quickly to find the main idea. Read it again. Try and answer your own questions. Underline only a few key words (not every one!) that you do not understand. Try to guess the meaning of new words from context. Use your dictionary if you are still not sure. View the video clip.

Equipment and Needs Assessment

All of the students were equipped with the same laptop computer they were issued upon entering the university. There were Internet connections located in the library, and several special study areas throughout the campus. However, there was only one Internet connection available in the classroom in the teacher’s console. Streaming media news items could be projected from my own laptop onto the main classroom screen using a projection device located on the ceiling and controlled from the teacher’s console.

In the first class, after introducing the course and reviewing the syllabus, I issued a written questionnaire translated into Japanese to determine: a) if the students knew how to use a web browser to find information on the Internet, b) if the students had a streaming media viewer, and c) if they knew how to download and install a free plug-in (a program which once installed on a computer, automatically opens and functions when it is required) from a site on the Internet.

Surprisingly, there were actually two students in the class who had never used the Internet and required private tutoring in that regard. Only one student had downloaded and was using a streaming media viewer to watch news stories on a regular basis. Five students required instructions on how to download and install the free streaming media viewer plug-in I had selected. I chose the popular, free version of the RealPlayer streaming media viewer because that was the viewer I was most familiar with.

Testing and Evaluation of Students

Students were evaluated based on their level of class participation, homework assignments, short listening cloze tests combined with open answer type questions based on streaming media video clips examined in class, and oral reports in which they summarized on-line articles of their own choosing and answered questions from classmates.

Course Evaluation Using Student Questionnaire

The final nineteenth session, the Self-evaluation Period was a valuable opportunity to get student feedback on the course. A questionnaire was translated into their native language. It was carefully explained to them that their responses would not affect their final grade. The students responded to the following six questions:

English Project Questionnaire

1. Do you think using the Internet is important for learning English?

Result: All of the students answered “yes”, citing, for example, that there are many interesting, entertaining and educational English web-sites and that most of the information on the Internet is in English.

2. Was it difficult to download the RealPlayer G2?

Result: Students had no difficulty with this after receiving a minimal amount of instruction in class. Japanese language support was also available at the site.

3. Do you think RealPlayer is useful? Why or why not?

Result: All the students agreed that it was useful. Many students mentioned that it could be used to listen to live radio programs in English-speaking countries, to watch music videos and news clips. However, many students expressed frustration at frequent “net congestion” in the peak afternoon times which interrupted programs.

4. Did you know about the RealPlayer G2 or other streaming media viewers before this class?

Result: Only one student knew that it was possible to use his computer like an international television/radio set, using free streaming media viewers to watch free video files on the Internet.

5. Do you prefer using a textbook for a course or a web-site like the www.bbc news? Why?

Result: All of the students answered that they preferred web-site based instruction to static, quickly outdated textbooks. Students found the current news stories stimulating. They enjoyed the combination of vivid high-definition pictures, written text, and embedded audio and video clips. The interactive story features, such as emailing in opinions to be displayed on-line around the world, and on-line voting on various issues were extremely popular. The archive feature of the BBC site and rich lists of related links provided with each story allowed them to search for more information on topics which particularly interested them

6. As a result of this course, are you now more interested in learning English by yourself in your free time?

Result: Six students did not answer the question. One answered “no,” citing time constraints. All of the remaining students answered yes.

The Downside of Streaming Media

Although this paper has shown some of the positive aspects of streaming media, in the interest of fairness, the following negative aspects will also be presented.

First of all, streaming media files are generally of lower-quality than downloadable clips. This is mainly due to the compression of the file. When the media file is encoded, much of the redundant bits of information are omitted in order to keep the file size to a minimum. The smaller file size means that the quality of the audio and video is diminished.

Another downside of using streaming media is the connection speed. In order to fully utilize these streaming files, a high speed connection is required. Without the necessary bandwidth, the streaming files may experience net congestion causing the file to be suspended. This can be a very irritating thing if it happens frequently. As of this time, the bandwidth requirements of streaming media is the number one drawback to its effective use. However, with cable and high speed connections being used more frequently, this problem may soon disappear.

A further negative aspect of streaming media is that the user is required to download some software in order to view the files. Windows users probably already have Windows Media Player installed. RealPlayer must be downloaded from the Real.com website. This can be a major inconvenience especially for users with older model computers.

Finally, as in all types of innovation, there may be a reluctance to incorporate this new technology into the classroom. At all levels of the education system, new technologies and methods of teaching must prove their worth before being accepted at large.

In contrast, some of the advantages of using streaming media are that the video or audio clip plays almost immediately, it is easily accessible for learners outside the classroom and it allows for different styles of learning. Furthermore, students may play back the clip as often as they need to. These positive features in addition to the nearly unlimited resource for video and audio content make streaming media a very exciting and viable resource for language teachers.

Future Directions of Streaming Media

The future of streaming media seems to be very bright indeed. With the addition of new technologies such as cable and fiber optics, high bandwidth internet connections could be as common as the television in the 21st Century. However until these new technologies are available to every household, other methods of data transfer will be explored. New and improved compression technologies will assist where bandwidth restrictions apply. Furthermore, wireless data transfer will allow internet connections where none were possible before. The widespread use of the Internet for entertainment will only increase the opportunities for streaming technologies. All of these advancements seem to indicate that streaming media is here to stay.

Conclusion

In this world of ever evolving mass communication and information technology, streaming media has surged to the forefront as a viable resource and tool for language education. Language teachers need to be familiar with the basics of this promising new technology as well as some of its applications for language learning. This paper has presented an introduction and overview of streaming media and the benefits of using real-time resources in the language classroom. Finally, the future directions of this internet-based media have been discussed. The sky is the limit for the uses of streaming media in the 21st century.

Appendix

Useful Streaming Media Sites

British Broadcasting Corporation Online	http://www.bbc.co.uk/
Broadcast.Com - Streaming Audio	http://www.broadcast.com
Canadian Broadcasting Corporation Online	http://cbc.ca/
CBC Newscast	http://cbc.ca/news/live/newscast.html
CBC Newsworld	http://cbc.ca/newsworld/
Kanazawa Institute of Technology Streaming Media Database	http://vod.kanazawa-it.ac.jp/mbase/
Randall's ESL Cyber Listening Lab	http://www.esl-lab.com/
RealConference 2000-03-11	http://real.jli.net/
RealPlayer Audio and Video Guide	http://realguide.real.com/
Seattle Media Site	http://media.ci.seattle.wa.us/
Streaming Audio Web Page Creation for Language Learning	http://www.esl-lab.com/online/
Streaming Business Intelligence	http://www.streamingmedia.com/index.asp
Streaming Media 101	http://www.reálnetworks.com/getstarted/index.html
Streaming Media World	http://streamingmediaworld.com/
Web Events for Windows Media Player (Audio/ Video Guide)	http://WindowsMedia.com/Default.asp

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- FireWire and Creating Web-Based Video Content
<http://www.kyoto-su.ac.jp/information/tesl-ej/ej14/int.html>
- How to add video to your site: Hardware and software. available:
<http://builder.cnet.com/Graphics/Video/ss02.html> (March 11, 2000).
- Streaming Audio Web Page Creation for Language Learning, by Randall S. Davis
<http://www.esl-lab.com/online/> (March 11, 2000)

Notes

Pros

- Streaming video plays almost immediately—after a few moments of buffering, viewers can begin watching the clip. (short wait time)
- Video on Demand
- Easily accessible for learners outside of classroom
- Students may replay as often as desired
- Nearly unlimited resource for video and audio content and expanding daily
- Good for students who need several different types of input to learn.

Cons

- Bit streaming video is generally lower-quality than downloadable clips.
- Problems with connection
- Net congestion
- Requires viewers to download and install software
- Reluctance to incorporate technology into the classroom

Investigating Comprehension Strategies by L1 and L2 Readers Using an Internet-Adapted English Cloze Test

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Abstract

First, the authors introduce a newly developed 'Internet-Adapted English Cloze Test' and examine its usefulness when investigating comprehension strategies employed by L1 (native English speakers) and L2 (native Japanese speakers) readers as they complete cloze passages. Second, both verbal protocol data and written protocol data (from the chat room) are shown along with the categorization of the strategies used by L1 and L2 readers. Third, the usefulness of the chat room to find out the correct answers, while explaining their reasoning, is evaluated. Finally, the strategies in filling in the blanks used by L1 and L2 readers are compared.

Introduction

Thanks to modern technology, information service using computers has spread and penetrated all over the world. As for the field of EFL (English as a foreign language) education in Japan, a learning style using computers is generalized and learning software aimed at acquiring practical English skills is developed.

In 1999, we developed the IAECT (Internet-Adapted English Cloze Test) and proved the usefulness of the system and analyzed the answer pattern of the L2 (native Japanese speakers) readers (Yoshida, 2000).

In this study, we used think-aloud protocols to investigate L2 readers' comprehension strategies using an IAECT. Think-aloud protocol analysis is a process-oriented research technique which allows researchers to gain insights into the performance strategies by the participants, asking them under controlled conditions to verbalize what they are doing or thinking. It was first devised and developed as a kind of refined and elaborated introspective method by Ericsson and Simon (1984, 1993).

Block (1986) first attempted to use think-aloud protocols as a tool to investigate the comprehension strategies of readers in L2. She compared the verbal data reported by L2 college students with L1 (native English speakers) readers in the United States. Two interesting results were reported. First, all readers can be categorized as integrators who effectively incorporate their own schematic knowledge into the textual information, and non-integrators who exclusively give attention to the detailed textual clues, and this distinction is common to both L1 and L2 readers. And second, the total amount of verbal production is almost equal in L1 and L2, which suggests that L2 readers perform the task with as much ease or discomfort as L1 readers.

In Kletzien's (1991) study, American high school students first filled in the blanks of the English cloze passage in which only context-dependent content words were deleted and then verbalized the reasons for their cloze responses. The analyses of the verbal data suggest two main points. In producing responses, participants make use of such strategies as key vocabulary, re-reading, making inferences, and previous experiences. Also good and poor readers both use the same type and number of strategies on the easy passage, but as the passage difficulty increases, good readers surpass poor readers in the variety as well as the number of strategies.

This paper analyzes data from four groups and examines the comprehension strategies employed by L1 and L2 readers as they complete the IAECT.

Methodology

Participants

The data for this study was provided by four groups. Group A consisted of 108 first-year Japanese university students (L2 readers) enrolled in a required EFL reading class. Group B of 20 third-year Japanese university students (L2 readers) enrolled in a seminar class. Group C included 21 second-year graduate school students (L2 readers). Group D consisted of 29 native English-speakers (L1 readers), who vary in age from 24 to 52.

System and Materials

Using the Windows-NT computer terminals, L2 students can access the IAECT from individual terminals. The cloze test software system: 1) may be used at any Internet access point without a time limit, 2) collects responses and immediately issues individual KR (Knowledge of results) upon task completion, and 3) logs supplied responses for future error analysis. The "Helen Keller" text has 118 words with 10 blanks words in narrative writing with a Flesch-Kincaid Readability Index of 3.8 served as the cloze test reading materials (See Appendix).

Procedure

Four groups supplied data for this study. Group A had a 15-minute limit to fill in the blanks in the passage on the computer screen. Group B was encouraged to use the group discussion chat room for exchanging their strategies in their L1 (Japanese) when taking the IAECT. Group C was allowed to produce think-aloud protocols in their L1 (Japanese) for their strategies while writing correct answers using IAECT and the responses were audio-recorded for analysis. Group D filled in the blanks and chose the strategies they used to complete the task from the strategy list. Kletzien's (1991) comprehension classification scheme for strategies was applied to classify the strategies, and they are:

1. passage's main idea,
2. blank-preceding textual contents,
3. blank-subsequent textual contents,
4. idiomatic or phrasal knowledge (vocabulary),
5. structural constraints of sentence (grammar),
6. background content schemata (background knowledge),
7. other strategy.

The data of Group A was used for investigating the difficulty level of the IAECT and gathering their various answers. The chat room output of Group B and the verbal protocol of Group C provided the data for examining which comprehension strategies were employed to complete the IAECT. The data of Group D was used for inspecting the difficulty level for L1 readers and their comprehension strategies to solve the cloze test in comparison with L2 readers'.

Alphabetic input data, supplied in the cloze blanks, were collected as CSV files which are easily imported into Excel spreadsheets. The verbal protocol data were transcribed by the authors, and the written protocols in the chat room were collected on-line and saved.

Results and Discussion

Group A

The outcome of the cloze test indicates that the total average score is 36.4%. There are six answers of the content words (Q1: books, Q2: traveled, Q4: woman, Q7: became, Q8: loved, Q10: parents), and four answers of the function words (Q3: is, Q5: was, Q6: she, Q9: they). The average score of the content words is 22.6% and of the function words is 57.0% which is about 2.5 times as high as the content words. L2 readers take points from the function words probably because the function words can be filled out with the knowledge of grammatical rules rather than referring to the contents of the passage.

In this system, credit was given by the exact word method, which means the right answers should be exactly the same as the words in the original text. Since this cloze test is an exact-word only, there were many cases where answers are the same as the part of speech as the right answers, and there are many cases where answers are acceptable, but are not the exact word.

However, in Q3, the right answer *is* in the sentence "But the surprising fact about Helen Keller (3:) this: she could not see and she could not hear." was mistaken by twelve L2 readers. They put "like" in the blank probably because L2 readers easily associate "like" with "this" considering the subsequent expression "she could not see and she could not hear."

Group B

There were two groups consisting of seven L2 readers, and one group of six L2 readers. They used the chat room on the Internet to find out the correct answers by exchanging their strategies. The outcome of the cloze test indicates that the total average score of these three groups is 53.3% and the part of speech of all items were answered correctly. This implies that the group chat can produce more accurate answers than individual readers. As the characteristic of this group is that readers don't fill the blanks in order, but fill the ones for which they are sure of the right answers. Here are some examples of chat logs (the translations are ours):

-
- S1: I don't understand why the Q3 is "was". Someone explain it, please.
- S2: Because "this" in the sentence of " the surprising fact about Helen Keller (3:) this:" is a subjective complement.
- S3: Well, the sign ":" means equal, so "was" is a right word.
- S4: Wait a minute, this sentence is a fact, so "was" should be replaced by "is".
-

- S2: There are many answers for Q9. Let's discuss it later.
- S3: That's a good idea. Shall we go back to Q8?
- S2: Q8 will fit "and", but I don't know why.
- S3: I don't think "and" is a right answer, but I can not find any alternate answers.
- S4: I can't find a suitable word for Q8, but I am sure that blank will be filled with the verb.
- S3: If you put "and" for Q8 the following next word is "and". So there are many ands. That's funny.
- S5: I think Q8 is a verb and the meaning concerns Helen Keller. For example her parents "encouraged", "cured", etc.
-

The frequencies of the strategies which were used by these three groups are shown in Table 1.

Table 1. Total Strategies Used by Group Chat

	Group A	Group B	Group C
a) Passage's main idea	0	0	9
b) Blank preceding textual content	16	20	21
c) Blank subsequent textual content	12	16	19
d) Idiomatic or phrasal knowledge (vocabulary)	1	4	7
e) Structural constraints of sentence (grammar)	40	39	40
f) Background content schemata (background knowledge)	4	0	8
g) Other strategy	0	0	0
Total	73	79	102

There is a slight difference among the groups in the general use of strategy, but it seems evident that L2 readers always use grammatical knowledge to solve the cloze test. Within the paragraph, both strategies of using blank-preceding textual contents and blank-subsequent textual contents are employed. On the other hand, L2 readers seldom use the passage's main idea or background knowledge. In other words, readers are doing local processing from the beginning.

Group C

The outcome of Group C members cloze test indicates that the total average score is 42.86% (see Table 2). L2 readers in Group C use 15.4 strategies and 5.57 different kinds of strategies for 10 items. The average score of the content words is 14.8% and of the function words 28.1% which is about twice as high as the content words. L2 readers take points from the function words probably because the function words can be filled out with knowledge of grammatical rules rather than referring to the contents of the passage. These results correspond with the result of Group A.

Table 2. Descriptive Statistics for Cloze scores, Total Strategy Use, and Number of Strategy Types

	N	Means	SD
Total strategy use	21	15.14	2.15
Number of strategy types used	21	5.57	0.93
Score (%)	21	42.86	14.88

Table 3. Average Frequency of Strategy of Function Words and Content Words for Each Participant

	Function words	Content words
Local processing	3.50	0.98
Global processing	0.20	0.77

The frequency of the strategy for function words and content words of each participant item is demonstrated in Table 3. According to L2 readers' verbal protocol, Kletzien's (1991) comprehension classification scheme for

strategies was applied to classify the strategies. We divided the seven classifications into two which are a “local processing” strategy and a “global processing” strategy. First, we categorized b) blank-preceding textual contents, c) blank-subsequent textual contents, d) idiomatic or phrasal knowledge (vocabulary), and e) structural constraints of sentence (grammar) as the local processing strategy. And then we categorized, a) passage's main idea, f) background content schemata (background knowledge), and g) other strategies as the global processing strategy.

We noted that obviously e) structural constraints of sentence (grammar), b) blank-preceding textual contents, and c) blank-subsequent textual contents were the major textual resources preferably employed by many participants. The result suggests that their general resources for processing cloze passage consist basically in blank-subsequent and -preceding textual information as well as grammatical clues and L2-to-L1 translation, which are usually referred to as “a local processing strategy” by a number of researchers including Carrell (1988).

From Table 3, each L2 participant used a “local processing strategy” about 4.62 times as often as a “global processing strategy”. The ratio of “local processing strategy” for function words was 3.57 times more than content words. On the other hand, the ratio of global processing for content words was 3.85 times more than function words.

The results reported above suggest that in function word cloze blanks, the students' use of textual resources is relatively limited to blank-preceding and -subsequent semantic and grammatical restraints, and this corresponds roughly to the strategy which is usually called “local processing”. On the other hand, in content word cloze blanks, more global textual clues as well as local clues are to be pursued by the students. The possible interpretation of this result seems to be that students begin to be engaged in somewhat more “top-down” or “global” type of textual processing in handling with the content word cloze items.

Next, we confirmed that the cloze responding order was almost the same as the blank order in the cloze except for Q8 (loved) and Q9 (they), which means that participants tried to fill in the blanks as they went through the passage. As for Q8 (transitive verb *loved*, on the other hand, they tend to withhold their judgment and come back to the blank later probably because of the structural constraints of the sentence.

Group D

The outcome of the cloze test for Group D L1 readers indicates that the total average score is 71.0% (see Table 4). Group D members use 16.45 strategies and 4.97 different kinds of strategies for 10 items. This corresponds with the results of Group C (L2 readers), which suggests that cloze performing ability between L1 and L2 readers is not dependent on the type and the number of strategies used in this passage.

The average score of the content words is 69.5% and of the function words is 73.3% which does not show a significant difference. Neither the function words nor the content words affect L1 readers' cloze test solving strategies.

Table 4. Descriptive Statistics for Cloze scores, total strategy

	N	Means	SD
Total strategy use	29	16.45	5.26
Number of strategy types used	29	4.97	0.98
Score (%)	29	71.37	15.52

The frequency of the strategy for function words and content words of each participant item is demonstrated in Table 5.

Table 5. Average Frequency of Strategy of Function Words and Content Words

Function words	Content words	
Local processing	2.81	1.19
Global processing	0.21	1.02

From Table 5, each L1 participant used a “local processing strategy” about 3.25 times as often as a “global processing strategy”. The ratio of “local processing strategy” for function words was 2.36 times more than content words. On the other hand, the ratio of global processing for content words was 4.85 times more than function words.

In the cloze blanks of the function words (Q3, Q5, Q6, Q7), the L1 readers' use of textual resources was relatively limited to grammatical restraints (58.5%), which is referred to as a local processing strategy.

We confirmed that obviously e) structural constraints of the sentence (grammar), c) blank-subsequent textual contents, and b) blank-preceding textual contents were the major textual resources employed by L1 readers. The result suggests that their general resources for processing cloze passage, especially for function words, consist basically of blank-subsequent and -preceding textual information as well as grammatical clues. The result also implies L1 readers complete the content word blanks with both local and global processing strategies.

Next, we asked L1 readers to write their comments on this processing cloze test. Here are some comments:

- I know the story of Helen Keller, which helped me to fill in the blanks especially in the latter part.
- I personally use grammatical knowledge for filling in the blanks through the entire passage.
- My general resources for processing cloze passage consist basically in the blank-subsequent and -preceding textual information as well as grammatical clues with the background knowledge of the story.
- It took me a long time to fill in Q8, because the word “love” was not used in this passage, so I tried to use all sorts of strategies for this item.

The Comparison of L1 readers and L2 readers

According to cloze scores and the number of strategy types used by each participant, the average score for the function words is higher than the average of the content words by L2 readers. The blanks Q3, Q5, Q6, and Q9 are easy items to answer, where L2 readers mainly used grammar oriented local processing with the help of background knowledge. On the other hand, the average scores for the function words and the content words do not show a significant difference among L1 readers. And according to L1 readers' after use comments, L1 readers may have used grammatical clues with or without noticing their using schematic knowledge for completing all the cloze items. This supports Block's (1986) study where he writes, "... all readers can be categorized as integrators who effectively incorporate his own schematic knowledge into the textual information, and non-integrators who exclusively give attention to the detailed textual clues..."

L2 Group C readers and L1 Group D readers, according to cloze scores, total strategy use, and the number of strategy types used by each participant, show nearly the same strategy for processing the cloze passage. Since the readability of this passage is on the fourth grade level, this cloze passage can be described as an easy passage. Kletzien's (1991) study may explain the reason of the similarity of L1 and L2 readers' strategy: good and poor readers both use the same type and number of strategies on an easy passage if we consider L2 readers as poor readers and L1 readers as good readers in this IAECT score.

Concluding Remarks

The findings that the present study provides us can be summarized as follows:

1. In taking the IAECT, L2 readers (Group A) earned more points from function words.
2. L2 readers' (Group A) mis-answers were acceptable in the semantic meaning of content words.
3. Using the chat room of the Internet (Group B) can produce more accurate answers than individual readers.
4. Using the chat room is effective for L2 readers to exchange their strategies and use their strategies to explain their choices to other members.
5. L2 readers (Group B and C), as a rule, answer cloze items in almost the same order they were presented.
6. In filling in the cloze blanks, both in L1 (Group D) and L2 (Group C), in general, attend to local processing resources such as blank-subsequent and blank-preceding semantic information as well as grammatical constraints.
7. However, in the function word blanks, both L1 and L2 readers' use of textual resources is restricted to such local processing cues as the ones used in 6) above.
8. On the other hand, in the content word blanks, both L1 and L2 readers tend to make more use of global textual resources, being engaged in more or less global type of text processing.
9. Both L1 (Group D) and L2 (Group C) are similar in total strategy use, and the number of strategy types because of this easy cloze passage.

Naturally, both L1 and L2 readers, when they are given easy-to-answer items such as the blanks of function words, do not use a wide variety of textual clues including local and global ones. They only attend to the minimum set of necessary clues, because global cues are often not necessary for filling in those easy blanks.

For all the shortcomings this technique might contain, the oral protocol analysis is still a useful method in a study like the present research whose purpose is not to provide decisive empirical evidence, but to pursue a further tentative research hypotheses. In part, this technique might reveal more about human on-line cognitive activity like reading which was previously considered to be inaccessible except by the usual evaluation methods of post-reading comprehension tests, summary writing, and so on.

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Appendix

Helen Keller was a famous American. She was a writer and a speaker. She wrote (1:) and articles about education and politics. She (2:) to every part of the world. But the surprising fact about Helen Keller (3:) this: she could not see and she could not hear. This blind, deaf (4:) was a very special person. Helen Keller (5:) not always blind and deaf. She was all right when (6:) was born on June 27, 1880. But she (7:) very sick the next year. After that, she was not the same. Her parents (8:) her and (9:) tried to take care of her. But it was not easy. Her (10:) could not show her what to do.

Issues and Aspects Surrounding English and the English Education of Children in Asian Countries.

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English Aspects of the various Asian countries.

As the use of English continues to spread in the areas of international trade and communication, politics, and science, ministries of education in a number of Asian nations have begun to implement English language instruction in their elementary schools. In Japan, the Ministry of Education announced that English lessons would be included in the elective subject, “International Understanding.” This program will start in all of Japan’s elementary schools beginning with the 2002 school year. As a point of comparison, this paper reviews the recent introduction of English language instruction in the elementary schools of South Korea, China, Taiwan, Singapore, the Philippines as well as pilot schools in Japan. After reviewing the experiences of Asian countries with English-language instruction in their primary schools, I will conclude by outlining some recommendations for educational language policy implementation at the elementary school level in the Japanese context.

Extensive Use of English—Economic, Political and Cultural Perspectives

In Asia, there are two sorts of English in use. One is as the second language, such as in Singapore and the Philippines, and the other is as a foreign language such as in Japan, South Korea and Taiwan.

For example, in Singapore, along with being the official language, English can also be seen as an assistant language, as the people who use English as their second language place it as a tool for communication between the multiple races. On the other hand, in Japan, English was one subject by which knowledge of advanced Western countries could be learned, so people learning English learn it as a foreign language for the entrance examinations to elite schools. This will most likely change with the new curriculum.

“The concept of English” varies in each country, and therefore a difference is seen in the consciousness of the learner toward English education, as well as the way the state treats English education as a whole.

The issues and aspects surrounding English Education can be classified into the three factors of (a) language policy, (b) language consciousness, and (c) the language environment.

Factor (a) language policy = state policy directing the use of English (English as an official language, tutorial language, or foreign language). This influences English education; the starting age, the curriculum, and the importance put on English in tertiary education.

Factor (b) language consciousness = the purpose for which people try to use English. This will show in the prevalence of learners wishing to study abroad, and the importance put on communication skills in business and the economy.

Factor (c) language environment = the conditions under which people have contact with English. This will be dependant on geographical elements, historic influences, inter-ethnic communication needs, and modern media and trade.

When comparing ESL communities and EFL communities, a great difference was seen in the conception of English, particularly in the area of language policy and language environment.

When examining the language policy, we see that English has been retained, from the colonial government, as the administrative language in the Philippines and Singapore.

In the Philippines, English is not only one of the official languages, but also the conversant language of higher education.

In Singapore, of the four official languages of Malay, Mandarin, Tamil and English, English is the only one which is not Asian in origin. It is hence regarded as 'neutral' for inter-group relations. Moreover, the importance of English is perceived in its use in higher education, international trade, and modern industry and technology which have strengthened over the years. The government deems an expansion of the proficient use of English necessary for the continued growth of the economy. It is obvious that English is of instrumental value both from the societal perspective of economic growth, and from the individual perspectives of social mobility and economic gain.

Therefore, in the Philippines and Singapore, in homes which put emphasis on education, there is a tendency to include the tuition of English from a very early age.

On the other hand, in South Korea, Taiwan, China and Japan, where it has been treated as a foreign language, English is considered a necessary tool for gathering the knowledge and culture of advanced Western countries.

However, in preparation for the global media age, South Korea and Taiwan have already taken steps to upgrade the level of English to be on a par with countries like Singapore and the Philippines. In South Korea, policy changes have brought about the introduction of English in Primary schools at the Grade 3 level since 1997.

In Taiwan, the Ministry of Education announced that English lessons would be included in the required curriculum at all elementary schools beginning in the 1999-2000 school year.

In Japan, English education will be introduced into public elementary schools from the 2002 school year, although at present English education only begins from the 1st grade of junior high school.

However, in contrast to the clear-cut National Education Policy, the concrete curriculum, and the re-education of teachers in South Korea and Taiwan, Japan's language policy is still not apparent. In spite of these differences we can still see a movement of ESL communities towards becoming EFL communities.

Therefore, in almost all Asian countries, importance is attached to English more than other foreign languages, as the curriculum and the entrance examination subject demonstrate.

Japan has always treated English as an elective subject, although in reality its appearance is close to that of a compulsory subject within the junior and senior high school curriculum.

When examining the classification of language consciousness, we see that it varies greatly between each state, due to historical influences and economic backgrounds.

For example, in Singapore, English is the language of foreign investment and technical support. Furthermore, its neutral position allows each race to communicate on an equal basis. Both in Singapore and the Philippines, proficiency in English means the gateway to high salaries, in-company promotion, and stable employment.

Therefore, among ESL countries, English is recognized as the elitist's language, and English education is carried out accordingly.

In South Korea, the three years of American Military Administration after the end of the 2nd World War in 1945 began the influence English was about to have on education. America's participation in the Korean War (1950

- 1953) further strengthened the correlation between English and economic development. This continued for over 20 years. English education was first fostered so the people could have access to world knowledge and culture. It has now been introduced into elementary schools, because the focus has moved to communication and global understanding.

As Japan also holds the idea of “English as a World language,” English lessons cover almost half of all foreign language classes taught on television and radio programs. Furthermore, in general, English language and culture classes take a much higher percentage of students than other foreign language or culture classes.

When examining the language environment of Japan, Taiwan, and South Korea, we find that, because each is composed of a single race, there is no necessity for a separate common official language, as there are no marked dialectal differences.

On the other hand, in Singapore, race composition ratios are 76% Chinese, 15% Malay, 7% Indian with various mother tongues being used at home. Moreover, this mixed parentage of the people is influenced by such cultures as India, China, Arabia, and Malay. Likewise, the Philippines has over 130 languages. Therefore, in Singapore and the Philippines, English has become the common language, bridging the gaps between the domestic languages of each race.

One important difference can be seen between Japan and South Korea. This is designated by the financial and economic independence of each country. Since South Korea’s National Economic Development Policy in 1980, it has felt a need to focus its internationalization program on the culture and life style of the United States in particular. In accordance with this, foreign language education has been strengthened, and English has been introduced into elementary schools as a compulsory subject. On the other hand, in Japan, English remains as part of “General Education,” an elective subject.

Questionnaire Investigation

Using a questionnaire about the consciousness toward English education, I compared 5 countries with the Japanese case. The subjects were university students in EFL and ESL environments. Please see Tables 1 and 2.

Table 1. The Language Considered Necessary for Global Communication

	1	2	3	4	5
South Korea	English	Korean	Japanese	Chinese	French
China	English	Chinese	Japanese	French	Russian
Taiwan	English	Mandarin	Japanese	Taiwanese	Spanish
Singapore	English	Chinese	Japanese	French	Germany
Philippine	English	Tagalog	Spanish	Chinese	Japanese

(1997 - 1998)

Elementary School English Education — A Comparison of Various Asian Countries and Japan —

The purpose of introducing elementary school English education varies for each country. For example, Japan introduced it as an “elective subject”, and English activities will become a part of the “International Understanding” education. While other Asian countries introduced it as a “Compulsory subject”, and English education is a regular class throughout elementary school.

Table 2. Do you Agree that English is the Most Suitable Language for a “World language” ?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
South Korea	10	49	29	10	2
China	18	52	10	17	3
Taiwan	27	61	8	4	0
Japan	17	62	18	2	1
Singapore	7	59	17	6	1
Philippine	49	38	10	3	0

(1997 - 1998)

Reasons for Introducing English

The following comments were given by the Asian countries as the purpose for elementary school English education.

South Korea. It is clear that “employment perspectives” are enhanced when one can speak the global tongue, English.

Taiwan. The need for “usable English” rose from social problems.

China. There are many Chinese people who think that: “in order to absorb the science and technology of various advanced countries”, the knowledge of English as the world language is indispensable.

Singapore. It is important to develop “English to enhance employment ability”. English is the “lingua franca of the multiracial nation”. English means “State economic prosperity”. It is a “political” and “educational” term.

The Philippines. English cultivated “employment ability”. It became the term of “school education”, introduced when the colonizing country changed from “Spain” to “America”.

Introduction, Starting Age, Course Contents and Learning Goals

Table 3 shows the conditions at the point of introduction of English tuition, the starting age of the learners, brief course overviews, and the learning goals within each country.

Table 3. Elementary School English Education of Various Asian Countries

Country Name	English Education Introduction Conditions	English Education Starting Age	Amount of Instruction	Goals for Learning	Contents of Learning
Japan	2002 introduction schedule	At present, from junior high school 1st year. From 2002, from 3 rd Grade in elementary school.	About one hour per week.	Touches on learning a foreign language, and getting accustomed to foreign life and culture.	<p>Learning activities suitable for elementary school grades, leading to a basic interest in things foreign.</p> <p>Foreign language education (such as simple English conversation), done as part of the “international understanding” education.</p> <p>1. In order to raise the will towards learning English, make the activities pleasurable.</p> <p>2. In order that the children may learn English naturally, focus on enjoyable activities which incorporate speaking and listening.</p>
Korea	1997 (extra-curricular activities since 1982).	Elementary education from 3 rd Grade.	Two-hours a week. (So that they may learn English at a more leisurely pace, this has changed to one-hour a week for the third and fourth graders from this year onwards.)	To develop the ability to express one's ideas and thoughts, and to express them in English. Also to develop communication strategies and with an ability of fundamental English.	<p>Spoken English is central to the curriculum.</p> <p>The contents gradually increase in difficulty (in terms of vocabulary meanings and the level required for understanding).</p> <p>Course content is restricted to the level of vocabulary recognition in the 3rd and 4th grades, and expression of ideas is handled in the 5th and 6th grades. Speaking and reading comprehension is done in co-operation with native- English speaking assistants.</p>

Table 3. Elementary School English Education of Various Asian Countries (Cont'd)

Country Name	English Education Introduction Conditions	English Education Starting Age	Amount of Instruction	Goals for Learning	Contents of Learning
China	Concern rose after the 90's.	Elementary school, Grades 4-6.	Tenshin: Twice a Week (45 minutes each). Shanghai: Four times a week.	Many Chinese believe that in order to absorb science and technology from various advanced countries, the knowledge of English as the world language is indispensable.	In spite of the government's way of thinking, Junior High textbooks haven't changed. Also, school children do not seem to be especially conscious of the urgency to learn English, either.
Taiwan	It will be introduced as a compulsory subject in the whole elementary school curriculum in 2001.	Elementary school Grades 5-6.	Two-hours a week.	The improvement of oral communication ability, and practical English learning.	Teacher education is done by native speaker so that class communication can be carried out by appropriately trained homeroom teachers.
The Philippines	In Manila English education started in 1898. At 7 elementary schools, the students were taught English by the American soldiers.	From Grade 1 elementary school, English is the language of Education.	80 minutes every day.	For the full term of school education. People try to use English as a tool for communication between the multiple races.	Philippine English is under the bilingual education policy since 1974. Training is done by competent trainers of English communication.
Singapore	English is the language of education from the elementary school onwards, since 1984.	From Grade 1 elementary school, English is the language of Education.	For the lower grades, 6 hours a week. For the upper grades, 9 hours a week. As other subjects are also done in English, it is really several hours a day.	English is the main means by which Singaporeans can communicate with other people.	Emphasis is placed on the acquisition of effective communication skills (those being the 4 skills of natural English)

Elementary School Education as a Part of “International Understanding” Education in Japan

Here it is important to consider the relevance of English education in Japanese elementary schools. The following conclusions can be made:

1. With relevance to “International Understanding” education and the education of English, the objective is to increase children's interest in, enjoyment of, and willingness to learn English.

2. It endeavors to make the most of the medium of English, endeavors are made to correlate their experiences so that children will further have an interest in, enjoyment of and willingness to learn more about international understanding.
3. It is important to attempt to use English as the medium of communication between different cultures.

In Japan, English education at pilot schools has worked well so far. Most children at pilot schools enjoy English activities, and most elementary school teachers think that English education should be done with pleasure. This can then be connected to English education at the Junior High School level with good preconceptions toward English. However, as recent trends are to only doing simple activities like playing games and singing songs, it is doubtful whether these activities will bring on good results for further English education.

On the other hand, English education in the elementary schools of most of the Asian countries, is modeled on the same methods of teaching immigrants in England and the United States. For not only Singapore and the Philippines, but also South Korea and Taiwan, the purpose for elementary school English education is the same. The people of these countries are longing for skills in English communication. It is therefore natural that such countries should have brought in the same method.

However, this method is not necessarily suitable for Japan. Japan being different from its Asian neighbors concerning the purpose for introducing English and the environment in which it is taught, I propose that English education for elementary schools should follow a curriculum that is true to Japan's goals and purposes.

It's Not Just a Language Lab Anymore: IALL's Perspective on Trends in Language Learning Technology

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Abstract

Language Resource Centers will go through massive changes in (a) the technologies and materials that are used in the centers, (b) the activities that take place in them, and (c) in the demands that are put on them by the administration, by instructors, and also by other disciplines. We'll have to redefine our territory, learn how to share expensive technical resources while maintaining control over those aspects of our centers that are unique to language teaching and learning.

Technologies and Materials

The technological race powered by current economic conditions is running at full speed. Vendors of language laboratory equipment have been eyeing experimental hardware and software over the last decade and are becoming more and more uncertain about which path to take for providing a product that could fulfill traditional needs but could also take advantage of the new information technologies. In the meantime, hardware vendors, with little concern for the needs of language laboratories in higher education, have relentlessly pushed up the ante by providing more speed, more storage, better sound, and better color at ever decreasing prices for their wares. Information technologies have invaded, if not flooded, institutions of higher learning and have become essential resources of almost all disciplines.

At my home institution, at Dartmouth College, information technologies became part of the main stream seventeen years ago with the introduction of the Macintosh computer to every faculty member, every student, and every room on campus. In 1989, only 11 years ago, Apple demonstrated Hypercard, sound, and a stamp-sized version of a QuickTime video on Macintosh computers. The potential of these innovative applications of information technology in education was immediately recognized not only at Dartmouth but at many other institutions as well.

Change did not happen independently. It happened in all areas of the institution and particularly in those departments that recognized early that implementation of information technologies would be to their advantage. Today information technologies are ubiquitous and language resource centers have to learn to live with them, integrate them, and optimize them in cooperation and collaboration not only within the boundaries of their own campus but also within national and even international consortia.

Fifteen years ago language resource centers, after decades of providing students with audio tapes in all formats, experienced the impact of video in PAL, NTSC, and SECAM formats on tape, laser discs, and from satellite feeds. The learning curve for the staff was not terribly difficult, since all the video technologies were similar to the existing technologies in the lab. Even video standards conversion was no big deal to our staff. The location for delivery, the location for meeting the clients, the location for maintenance of machinery remained at the physical site of the "lab."

When information technologies in the form of word processing computers entered language resource centers in the mid-eighties, the staff was seriously challenged with equipment that had little relationship to what they were

used to before. Rapid technological progress brought, in quick succession, graphics, audio and video in the early nineties, adding to the already considerable frustration of the staff. Multitudes of software packages—many of them containing more bugs than software—put enormous burdens on the staff to train themselves, to train faculty members, to assist students. Operating systems changed monthly, computers were obsolete after 12 months, networks became outdated and too slow, and in all this chaos language resource centers managed to provide reliable services for all language learners.

The challenge today is to implement and optimize existing technologies while preparing for the next future shock in whatever we do. Audio delivery via audio tape will be with us for many years to come until our clients get tired or until the superiority of alternate delivery systems becomes obvious to all. Today's audio delivery systems can do a lot, tomorrow's will probably do better. Today's choices are between "streaming" and "file-shared" delivery. The difference is critical. Users of interactive applications that require instant delivery of audio upon a mouse-click will not be satisfied with the usual 5 to 12 second delay before the sound arrives at the workstation. These users need "file-shared" audio files that perform in the required manner.

Delivery of audio materials can now come from a compact audio CD, from a CD-ROM, directly from a hard disk, and from a network, i.e. from a server. All these technologies require knowledge of the capabilities of the individual workstations, the capabilities of the network, the capabilities of the server, the various production and archiving standards, and the potential for conversion into future standards. We can assume that almost all sound will be delivered via networks in the future—if publishers go along.

Standards for audio files have already proliferated. Names like QuickTime, MP3, Wave, RealAudio, "hinted," are rapidly becoming standard vocabulary for our staff. This is not the place to discuss the various merits of these formats. If we look into the future we can simply state that we need one format that has the highest audio quality, total platform compatibility, the smallest file size, delivery instantly at the lowest possible bandwidth to the client.

Standards for video files have proliferated as much as those for audio files. Names like MPEG, MPEG1 and MPEG2, DVD, and QuickTime (which is only a container for various files identified by codecs used for compression like Cinepac, Sorenson etc.) are also standard lingo spoken in language resource centers. Here, too, we need the same as for the audio files: highest video quality, total platform compatibility, the smallest file size, and delivery instantly at the lowest possible bandwidth to the client.

Production of audio and video files is still rather time consuming and expensive. Audio files for distribution on networks can be produced in about double real time. High quality Sorenson encoded video for delivery via a network or delivery via a web site requires between twenty and thirty hours for each hour of playable video. This ties up a high-end workstation. Staff has to be trained to make responsible decisions when it comes to overall quality, color balance, contrast, frame rates etc. during the production process.

Other materials in current use, primarily learning environments, provided on CD-ROM media are really too constricted (sometimes this may be useful, particularly for remedial aspects) for the motivated learner. We have seen publishers' attempts to provide complete packages—consisting of textbook, compact audio disks, CD-ROMs, and web pages that are updated weekly. These packages seem to point into the direction of future materials to be used in language instruction. My impression is that we'll see a much higher degree of sophistication in the user interface. We'll see the voice-controlled computer and we'll see an interface that is appropriate to the student's learning style and strategy. Authentic materials on the web will be combined with local, narrowly-focused materials, providing a rich environment of text, graphics, audio, and video that will have various tools and interfaces that adjust automatically to the needs of a particular student.

Delivery of audio and video via local servers is common practice these days. Maintenance of servers requires a lot of technical knowledge and a lot of responsibility. The best current technologies are based on UNIX, Linux, Windows 2000, AppleShare, and OSX (also Apple). All of these technologies have advantages and disadvantages and it falls upon the language resource center to make responsible decisions when putting this type of machinery into service.

The four areas of audio, video, learning environments, and servers I discussed so far point to the enormous amount of technical know-how that has to be available inside a language resource center from now on.

But this is only the proverbial tip of the iceberg. There are many additional areas which need to be touched upon that will challenge us in the future.

Among them (a) Infrastructure issues. Very few new resource centers have focused on future infrastructure needs in the planning and design phases. High-end video delivery should not be done via wireless networks! The network (or at least the conduits for the network) must allow future updating to very high speeds. Decisions of this type are normally campus-wide and a director of a language resource center needs to understand these technologies to be a competent spokesperson for his/her area when it comes to institutional planning. Among them (b) Software support issues, particularly in the less commonly taught languages. This does not only mean to be able set the web browsers to different encodings, it means competent handling of users' request all the way up to configuring a machine for doing all kinds of things in all languages. It requires knowledge of resources and search engines on the web. It also requires networking with colleagues in the same field.

A quick look at some statistics (1987 – 2001) will demonstrate the massive changes we have discussed.

Lab Statistics and Projections 1987 - 2001					
	87	95	97	99	01
audio cassette stations	50	40	22	10	5(?)
VCR stations	0	7	6	6	6(?)
multi-standard VCRs	0	3	3	1	1
satellite dishes	1	4	5	9	9
SCOLA	no	yes	yes	no	no
other TV providers	0	0	2	5	5(?)
dedicated campus cable channels	1	4	6	10	10+
laserdisc stations	5	3	1	1	1
DVD stations	0	0	0	1	5
Multi-standard DVD	0	0	0	1	4(?)

Figure 1. Traditional LL technologies from 1987 to 2001

We can see (in Fig. 1) the demise of traditional language lab technologies. We can also see the peeking of laserdisc technology and its quick demise. Satellite technologies, on the other hand, seem to be going strong. We can also see (in Fig. 2) the rise of computers, file serving and streaming technologies. Most significant seems to be the increase in storage capacity of the servers.

Lab Statistics and Projections 1987 - 2001					
	87	95	97	99	01
high speed cass. copier	1	1	1	1	1
cassette tapes purchased	1500	1000	500	0	0
computers (Mac)	1	7	9	15	7
computers (PC)	none	2	2	6	7
file servers	0	1	5	5	5
file server capacity	0	300meg	4gig	200gig	400gig
AppleShare	no	yes	yes	yes	yes
NT	no	no	no	yes	yes
Linux	no	no	no	yes	yes
CSX (Apple)	no	no	no	yes	yes
AIX	no	yes	yes	yes	no
streaming video (SIG)	no	no	yes	yes	no
streaming video (RTSP)	no	no	no	yes	yes

Figure 2. Increase in computers, etc., from 1987 to 2001

Last but not least, we can see in Figure 3, a proliferation of networks across campus, a much higher diversity of equipment, and a very significant decrease in the number of actual visits to the Language Resource Center.

The data in Figures 1 through 3 is not unique for Dartmouth's situation. We are quite sure that other institutions can provide similar data. The new technologies will lead to lab setups that are very different from what we are used to. Fig. 4 shows the technologies in use in Dartmouth's lab at the beginning of the fall term in 2000.

The center of the lab (Public Lab in Fig.4) provides the old and the new technologies. The Service Lab, invisible to the users, provides servers, and production facilities. The virtual lab (on the network) is accessible from all campus network ports and, if desirable, is accessible from anywhere in the world for purposes of distance education.

The technologies in future language resource centers, therefore, will provide the very basis from which our services will originate. The capability to manage these technologies and to make them comprehensible to faculty and students in the context of language learning and teaching will guarantee our place in the institution and with that an assured place next to the library and other providers of information resources.

Lab Statistics and Projections 1987 - 2001					
	87	95	97	99	01
DDS backup drive systems	0	1	2	2	2
CD burner	0	2(4x)	2(4x)	2(4x)	3
CD blanks purchased	0	10	100	300	?
DVD burner	no	no	no	no	yes
network Appletalk	20	30	30	2	1
network Ethernet (10BT)	0	10	30	10	1
Network Ethernet (100BT)	0	0	7	15	30
beds connected to network	all	all	all	all	all
backbone	10	100	100	100	1000
visits per week (fall term)	1500	1200	1000	800	400
space occupied	1500	1500	1500	1500	?
number of languages served	8	9	11	12	13
FTEs	3.5	2.5	3	3	3

Figure 3. Increase in networks and decrease in visits to the Language Resource Center

Activities

The traditional audio tape machine allowing listening, recording and comparing was the *raison d'être* of language labs of the past. The machinery was expensive, had to be in a separate room, and had to be supervised. Students' use could be controlled and monitored. Teachers could listen in to the activity, even interrupt it. There is not much evidence of the usefulness of the most common activities in this type of language lab. In fact, many labs were used for listening only. A majority of the faculty in my institution, for example, could not see any point in installing a console into the last traditional lab installation we did in 1988. Activities need to be integrated in a course of instruction. If students realize that the activity makes sense, and if students realize that the activity that is supported by technology helps them to learn more easily, faster, more efficiently—they'll go for it. If not—they'll read the newspaper.

This makes it clear that activities should not be carried out for technology's sake but for the learner's sake. Technology offers us an enormous opportunity to be creative and playful. A language resource center's role will be to interpret the technology, make suggestions, try out new materials, register faculty and students' reactions—and push for the very best. The broadening of activities is possible through the availability of the new technologies. We can now foresee activities that can be carried with the assistance of compact audio disk players, DVD players, multi-media/networked computer stations, the web, video conferencing, in various electronic chat rooms, in virtual discussion groups, and more.

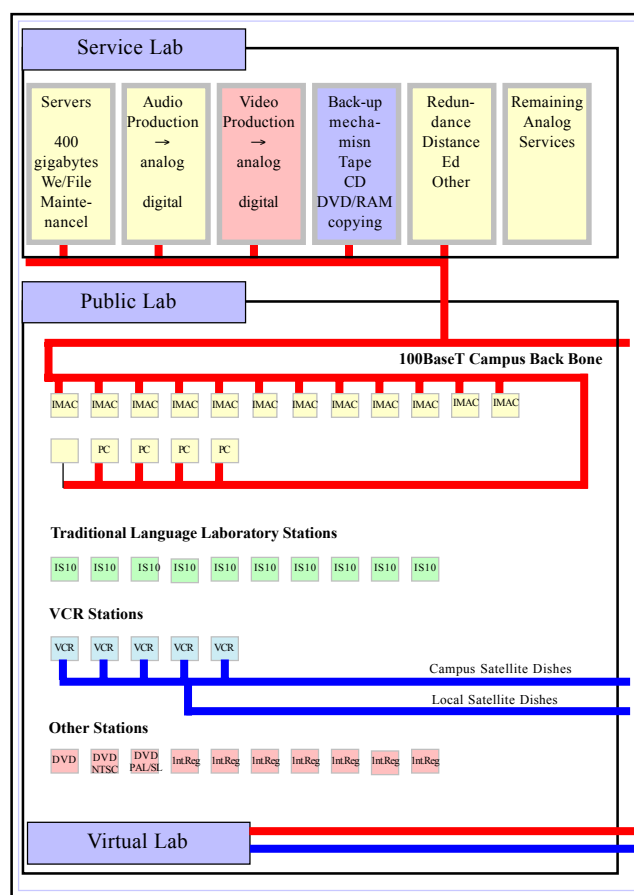


Figure 4. Public Lab

It is impossible to predict all the new types of activities that may take place in the lab or will be provided by servers to dormitory rooms or even provided into distance education channels. A few seem to be obvious: voice recognition, feedback on pronunciation, usage of human monitors via the web, and adaptive workstations.

What is not so clear at all is the pedagogy. Some early twentieth century pedagogues and their students survived the language lab period without apparent harm. Over the last decade pedagogy has had a respite from the pressure of providing better services at lower cost. This may change in the future. At this point the pressure will be put on to distinguish clearly which activities belong to technology and which activities belong to the human instructor. This may change instruction dramatically and it may also change the role of technology in the learning process.

Demands

Figure 5 attempts to highlight some of the demands that are currently placed on the Language Resource Center in my institution. “Direct/on Location” represents the traditional physical language resource center. “Streaming” and “File Serving” represent redundant services. “Other Services” represent the standard services that need to be carried out in centers whether there is a lot of technology or not.

Obviously the demands have increased and will continue to increase.

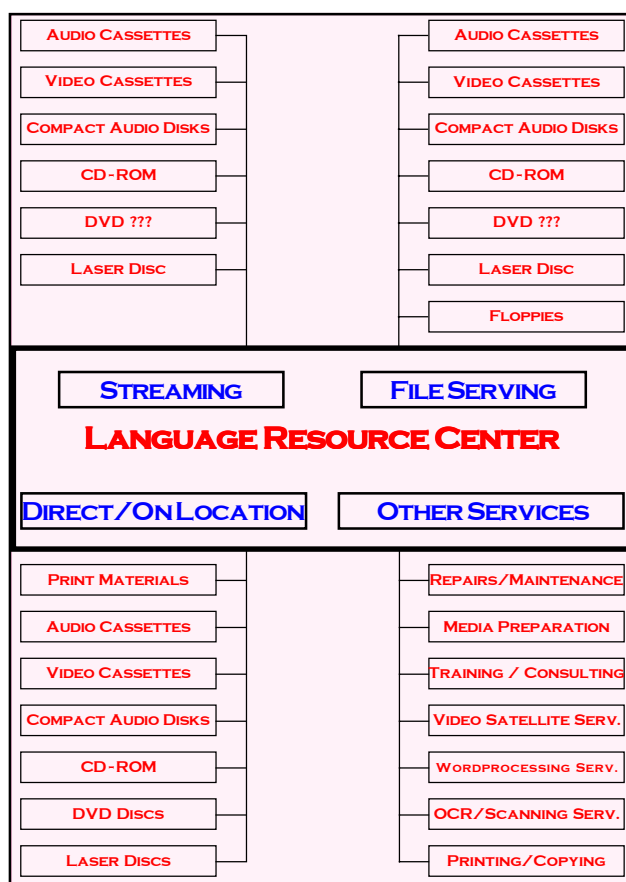


Figure 5. Demands placed upon the Language Resource Center

The times of copying audio tapes and handing them to students are over. The times of living in a protected niche on campus doing just languages have gone by. Language resource centers will find themselves within the main stream of information technology providers on campus. They will have to compete for clients, for budgets, and for space. They'll have to reinvent themselves every day and justify their existence. I personally believe that we have a lot of reasons to exist within the framework of all the other providers. The quality, integrity, and viability of our services cannot be provided by the library or by computer centers—just as we cannot provide all the services of a computer center. But—we need to constantly redefine our territory and cooperate and collaborate where it makes sense. At the same time we have to stick to our basics, being, what we believe (and can prove) essential components of language learning and teaching.

Japanese Reading Support System Focusing on Learner's Needs

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Abstract

Kanji is a big barrier against learning Japanese for overseas learners, especially non-Chinese. It is difficult to acquire enormous kanji for limited time. What is the best way to learn their needed kanji based on the educational demand efficiently? In these days, we can get vast information via Internet. Learners have much Japanese stimuli on Internet nevertheless their Japanese proficiency level. Can they apply enormous Japanese information resource for their learning? So we have developed Japanese reading support system focusing on the educational demand, called JUPITER (JUKugo Learning Environment through PLaIn TExt Reading). Our system supports the learners to learn kanji based on the Japanese text document in which they are interested. We introduced JUPITER to Japanese reading class at Fukui University in 1999-spring semester. Compared with consulting a paper dictionary, they have extremely shorter time to check the reading and meaning of the kanji.

Background

Kanji is a big barrier against learning Japanese for overseas learners, especially non-Chinese. In general, they begin to learn a simple stroke kanji in an elementary course. After learning 500 basic kanji, they must learn more than 1,500 kanji and a vast amount of kanji compounds which consists of two or more kanji for daily life. It is difficult that they can acquire an enormous kanji for the limited time. What is the best way to learn their needed kanji based on the educational demand efficiently?

The above background considered, there are some approaches to solve the educational demand. The one is learning kanji based on the frequency at the specialized fields (Nozaki, et al. 1995). The feature of this approach depends on the frequency of the original data. The frequency always does not correspond to the learner's educational demand. The second approach is ready for the database of many teaching materials (Sakayauchi, et al. 1994). In this approach the kanji data is restricted in the teaching materials.

Recently we can get vast information via Internet (WWW, e-mail, Netnews, etc.). Learners have much Japanese stimuli on Internet nevertheless their Japanese proficiency level. Can they apply enormous Japanese information resource for their Japanese reading learning?

There is an approach to take notice of Japanese information resource via Internet. For example, Dict-Linker analyzes Japanese plain text into Japanese morpheme, links to kanji database in the system, and displays the kanji meaning on WWW (Kitamura, et al. 1999). Although we take the similar approach to Dict-Linker, in our approach learner can add and correct the kanji data to the database in the system, and realize the personal kanji-learning environment. We explain our system in detail in the following chapter.

JUPITER: Japanese Reading Support System

We have developed Japanese reading support system focusing on learners' needs, that is the educational demand, called JUPITER (JUKugo Learning Environment through Plain Text Reading) (Wakita, et al. 1997, Ochi, et al. 1998). Internet has come into wide use in these days, it is easy to obtain many Japanese plain text documents through Internet. We treat "learners' needed kanji" as the kanji in which they want to read an optional Japanese plain text.

Outline of JUPITER

Figure 1 shows the learning environment of JUPITER. First of all, learners download the JUPITER system from the web site (<http://n65.is.tokushima-u.ac.jp/ochi/software/index.html>) and install it on the windows PC. Learners take the optional Japanese text document in which they are interested. They copy the target text documents freely on the electric media and paste them on the JUPITER. As the documents have many kanji in their normal browsing, it is hard to understand them. However JUPITER analyzed the kanji data in them and shows the reading the kanji by printing it in hiragana on its upper side automatically. If they want to know the meaning of the kanji, JUPITER indicates it by linking the kanji to a kanji dictionary with the mouse-click on the kanji, too. JUPITER has the function monitoring learners' kanji action and records their kanji learning information. In order to confirm their needed kanji, JUPITER does not display the reading of the kanji that the learner should understand on purpose.

Learning Strategy

The goals of the system are to support the Japanese text document reading and learners' acquirement of the kanji knowledge gradually.

The learning strategies of JUPITER are as follows.

1. Selecting Japanese plain text document freely from electric media. (Open-ended teaching materials.)
2. Controlling the printing of the kanji reading in hiragana on its upper side according to learners' educational demand. This means that JUPITER does not show the kanji reading that the learners should have learned. If learners select the all reading mode, all reading of kanji are displayed.
3. Indicating the meaning and reading by a mouse-click on the kanji. And the same reading of kanji that already has learned is listed at the review window.
4. Creating a reading practice mode, as most of kanji have 2 more than readings.
5. Adding and correcting the kanji data to the kanji database on the system. (An open-ended kanji database.)

System Configuration

JUPITER consists of 3 main parts. There are the kanji database, the resource controller, and the learning environment. The database has about 2000 single kanji data, 16,000 two-kanji compounds, and 10,000 three-kanji compounds based on EDICT (Breen, 1994). The resource controller consists of Learner Model and Japanese morpheme analyzer which links to original Japanese text document and the kanji database. Using Japanese morpheme analyzer, more than four-kanji compounds are analyzed an appropriate single kanji and kanji compounds. Expanding kanji database KIDS-II (Ochi, et al. 1995), the system controls the reading of single kanji in the compounds.



Figure 1. Interface of JUPITER

Practice of JUPITER to Japanese Class

Outline of Japanese Class

We introduced JUPITER to Japanese reading upper class at Fukui University in 1999-spring semester. Spring semester had 15 weeks, one school hour was 90 minutes and the Japanese class was held once a week. There were 12 overseas learners at the class; 6 Chinese, 4 Malaysian, 1 Vietnamese, and 1 Israeli. On the learners' frequency of PC use, 50% learners used it everyday, 33% learners used it once a few days, and 17% learners used it once a few weeks. Learners could use only three JUPITER-installed PCs in the overseas students room.

How to Introduce JUPITER to Japanese Class

The aim was assisting Japanese reading of raw materials. In this class we used Japanese paperback "the secret of 101 hit-goods in Japan" as a textbook. There are 101 topics on the hit-goods in the book and one topic has about 1,000 words in Japanese. A teacher changed the paperback into the text documents by OCR software and put them in the PCs. And the teacher added unregistered kanji data to the database on the system. Learners must pick one topic up from the paperback, read it by using JUPITER, and research it. Before every class, they had a duty to use JUPITER and prepare their lessons. A few learners took a presentation of their topic (an abstract of the paperback and research) in every class.

Results and Future Works

Results form the questionnaires

We took a questionnaire on JUPITER use at the end of class. The questions (4 multiple-choice ones and a free comment) and answers are as follows.

1. Did you know the reading and meaning of kanji on the paperback?
Very well 8%, Well 17%, Ordinary 17%, Not well 8 %, Not Very Well 17%, No Answer 33%
2. How many times did you use JUPITER?
Always 0%, Sometimes 25%, Hardly 42%, Not At All 8%, No Answer 25%
3. Do you think JUPITER is available for Japanese reading?
Yes 75 %, No 8%, No Answer 17%
- 4-1. If did you "Always/Sometimes" use JUPITER, what were the advantages?
 - 1) To know the reading and meaning of kanji without a dictionary.
 - 2) To display the reading of kanji quickly.
 - 3) To check all Japanese text documents as well as all the teaching materials of this class.
- 4-2. If did you "Hardly/Not at all" use JUPITER, what were the disadvantages?
 - 1) No time to go the overseas students room. (A lack of JUPITER installed-PCs.)
 - 2) The displayed reading of kanji was not always correct.
 - 3) No comprehension how to use JUPITER.

5. Free comments

- 1) I hope all PCs at the university could permit to install JUPITER.
- 2) I hope the displayed readings were 100% correct.

Judging from the questionnaires, most learners approved the validity of JUPITER for Japanese reading support system. Though they could use it on only 3 PCs, it was low frequency of use on the whole. The advantages were as follows. Compared with consulting a paper dictionary, the learners had extremely shorter time to check the reading and meaning of the kanji. Especially non-Chinese set a high evaluation on it and were grateful for it. They could check the reading and meaning of kanji at not only the teaching materials of this class but also all Japanese text documents on the electric resource.

Future Works

We argue future works from the two points; one is from issues out of system, and the other is on the system.

Out of System. It is necessary for learners to make an environment of using the system always. To use JUPITER, it is necessary to install it to PCs. As no learners at this class had their own PCs, they could not install JUPITER at their PCs. In addition to it, we could not permit other PCs at the university to install the system. So if they use JUPITER, they must have gone to the PCs at overseas students and the chance to use it has extremely restricted. On this issue, one solution to a problem is to remake JUPITER on WWW. WWW does not depend on the platform or the procedure of installation, however it needs the environment to connect to Internet always.

On the System. The showed readings of kanji on JUPITER were not perfectly correct. It is impossible to choose 100% correct reading in using the latest technique. Especially a long kanji compound is difficult to divide appropriate morphemes by the latest morpheme analyzer. And some kanji compounds have 2 readings and 2 meanings (e.g. “kon-nichi (these day)” and “kyou (today)”, “si-jyou (exchange)” and “ichi-ba (market)”). Though men can judge the appropriate reading on the text circumstances, the present system can not. We will make an effort to refine the accurate reading.

The second issue is to add a grammatical function newly to JUPITER. A reading support does not mean only to support the reading and meaning of kanji. The next step is to learn the sentence patterns or special expressions and understand a sentence structure on JUPITER.

Summary

We have developed Japanese reading support system focusing on learners' needs called JUPITER. And we have introduced it to Japanese class at Fukui University. The merits using JUPITER is as follows. The one is that learners could check the reading and meaning of kanji on JUPITER. As compared to a paper dictionary, they can know them quickly. The second one is that Japanese plain text documents were not restricted, that is, learners can use an open-ended Japanese teaching material on the electric resources. The third one is to add and correct the kanji information on the database by a user, that is, an open-ended database.

On the other hand, there are future works. From the issue out of system, it is necessary for learners to make an environment of using the system always. From the issues on the system, the showed readings of kanji on JUPITER are not perfectly correct. It is impossible to choose 100% correct reading in using the latest technique. But we will make an effort to refine the accurate reading. The second issue is to add a grammatical function newly to JUPITER in order to reinforce the reading support.

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Joint Venture in China: A Simulation for Teaching Chinese Business and Language¹

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Abstract

Joint Venture in China is Web-based, multimedia, single-user simulation courseware which teaches Chinese business language and practice in the context of an extended business task. Students play the role of the Assistant Vice President of Development for VekTech, an American maker of computer peripherals intent on establishing a business presence in the People's Republic of China. They work through four modules in which they successively develop a business strategy and choose an entry mode, find a potential Chinese partner, negotiate a contract for a joint venture, and finally operate the enterprise. In the course of doing this work, students must read email (internal to the simulation), consult with fictitious colleagues and Chinese officials and business people, study various documents, write reports, and do decision making which will affect the course of negotiations and the eventual success of the joint venture. The simulation is databased, allowing quick implementation of new content without modification of the programming framework.

Introduction

The increasing globalization of business at the beginning of the twenty-first century has been accompanied by an increasing demand for instruction in language for business purposes. China's growing economy and its burgeoning trade ties with the United States have made knowledge of the Chinese language a particular priority for many American business people. Unfortunately, conventional business language instruction often consists of generic readings that are not situated in any actual business context. *Joint Venture in China* (referred to subsequently simply as *Joint Venture*) allows business Chinese to be acquired in the context of an actual business task.

Joint Venture is a Web-based, multimedia simulation courseware which asks the student to play the role of the Assistant Vice President of Development for VekTech, a (fictitious) American maker of computer peripherals intent on establishing a business presence in the People's Republic of China. Students progress through four modules, in which they develop a business strategy and choose an entry mode, find a potential Chinese partner, negotiate a contract, and finally operate the enterprise. In the course of doing this work, students must read email (internal to the simulation), consult with fictitious VekTech colleagues and Chinese officials and business people, study various documents, write reports, and do decision making which will affect the course of negotiations and the eventual success of the joint venture. The simulation is single user: each student interacts only with the courseware and not with other students. To some extent, *Joint Venture* evolved from *German Newsroom* (Hart, 1994), a databased, multimedia environment for teaching intermediate-level German writing and listening comprehension.

Joint Venture is aimed at two audiences: first, international business students with an interest in China and intermediate proficiency in Chinese (equivalent to about six semesters of study); second, business people without Chinese language competence who need a working knowledge of Chinese business practice. To accommodate the second group, the simulation can be set to provide an "interpreter" for all Chinese content.

Instructional Design

The courseware has the dual objectives of teaching Chinese business language as well as business culture, procedures and technicalities specific to the People's Republic, with about equal emphasis on each. It is task-based in the sense that students read and hear Chinese only in the context of an ongoing, complex simulated business task — that of establishing a Chinese/American joint venture. After completing *Joint Venture*, students should have a good understanding of the procedures, options, and pitfalls associated with establishing a joint venture in China, as well as proficiency in the relevant Chinese language.

To guarantee that the business aspect of the simulation will be substantive and not simply an excuse for language use, we based the business content on models derived from a careful study of the business literature on Chinese and other joint ventures. This preliminary research conducted under the direction of Chen suggests that the general factors and specific components shown in Table 1 characterize successful joint venture partners:

Table 1. General Factors and Specific Components Influencing Suitability of Joint Venture Partners

General Factor	Specific Components
Goals and expectations	time commitment
Human resources	workforce size educational level of workers engineering force workforce training government ties
Government incentives	government incentives
Location	location
Infrastructure	transportation communication
Factory facilities	size
Market power	potential market size sales force sales strategy and customer service distribution channels
Foreign experience	direct export authority current joint venture partners
Finance	financial record triangle debt foreign exchange access
Other	record of protecting intellectual property concern for workers safety

This model, which constitutes the main business content of Module 2, is made available to the reader as an “internal VekTech document” and is also internalized in the operations of the simulation.

The authors of the simulation have developed three fictitious Chinese companies: Red Star Electronics, based in Shanghai, Ningbo Electronics, in Ningbo, and Huaxia Electronics, in Xian. These three companies were devised to vary significantly with respect to the factors of Table 1: Huaxia is a government-owned, money-losing company with heavy triangle debt but good government contacts. Ningbo is smaller, privately owned, low debt, but largely without government contacts. And so on. The available information is specified in such a way that Shanghai is clearly the best choice as partner, Ningbo second, and Huaxia a poor third.

The modules themselves guide the students through the major phases of setting up a joint venture in China. Module 1 (Developing a Strategy) simulates some discussion with VekTech colleagues of VekTech’s overall business situation and joint venture strategy. The main purpose of this module is to assure that students have a working knowledge of VekTech, something essential for later work, and a good knowledge of the partner choice model displayed in Table 1. The needed information is all within the simulation. Students have access to a library of documents where they can read about VekTech’s finances, operations, and business strategy. They can also consult simulated email, in which the VekTech CEO gives instructions about how the joint venture is to be approached. Equally important, they can learn about the characteristics that make a good (or bad) joint venture partner.

In Module 2 (Choosing a Partner), students examine a number of Chinese companies as potential joint venture partners and choose the best one for further negotiations. Students make simulated site visits to each of the three Chinese companies, where they may “interview” various individuals and collect detailed information about the business (Figure 1). For students who have elected to work in Chinese, all of this information will be given in Chinese. In the present version of the simulation, Chinese text (characters) and Chinese audio are presented, accompanied by still images of the various personnel; as the program develops, we expect to replace the audio material by video clips. Since a great deal of information is available, an on-line notebook is provided where students can take notes. The goal at the end of the three site visits is to decide which company is the best option as a joint venture partner.



Figures 1. Discussion during site visit to Red Star Electronics

Students may request information on any of the topics listed at the left of the figure. One of the Chinese personnel pictured at the top of the window will reply with some information. After absorbing the reply, students generally have the choice of several responses: ask additional questions about the same topic or choose another topic.

To succeed in Module 2, students must collect a sufficient amount of relevant information and must then integrate that information to reach the right decision about which partner to pursue. Students are warned that, as in a real interview, they cannot request an unlimited amount of information but will have time for only a fixed number of inquiries. This serves to focus attention on what information is important to partner choice (as defined by Table 1) and what is irrelevant. Both essential and irrelevant information are available, and students are free to ask for either. However, the program keeps track of student requests and, at the end of each site visit, evaluates each student's information-gathering efficiency. If students fail to collect essential information or spend too much time gathering irrelevant information, the program explains this.

After the last site visit, students are asked to rate each of the three companies on each of the factors in Table 1. When a rating is clearly at variance with the information collected, the program gives appropriate feedback and asks for a new rating. After all the ratings have been satisfactorily completed, students asked to select the best joint venture partner. This requires correctly combining all of the rating information into a bottom line decision. If the student does this incorrectly, the program will note the wrong decision and explain to the student why the assigned ratings do not justify the choice made.

In Module 3 (Negotiating a Contract), the chosen company becomes the target of negotiations aimed at arriving at the legally binding joint venture contract. The focus is then on negotiating model, negotiating strategy, and differences between Chinese and American negotiating styles (Breth & Kaiping, 1991). The main interaction is a simulated negotiation between VekTech (represented by the student) and the Chinese company (whose negotiators are simulated by the program).

Module 4 (Operating the Venture), which (like Module 3) remains to be written, will follow the newly established joint venture through several years of operation. It stresses the kinds of difficulties that can lead to failure of the joint venture. These cover a wide range of legal, economic, and cultural difficulties, as discussed for example in Lewis et al. (1996).

Since students are assumed to be at an intermediate competence level, the main objectives are to learn relevant vocabulary, specialized constructions, genre and discourse conventions, and important points of business culture. The most important tools for learning Chinese are an English translation, to aid where direct comprehension of the Chinese is not possible, and a , currently under development. The dictionary contains specialized business vocabulary and gives extended explanations of the more complex or culture-specific concepts, much as in Li, et. al. (1993).

The materials are meant to teach reading and listening; in the current version, no productive skills are exercised. The nature of the task automatically provides a considerable degree of vocabulary and form repetition, which aid language acquisition. Module 2, for instance, involves repeated interviews covering the same topics and utilizing much of the same vocabulary.

The nature of the joint venture task dictates that Chinese language be introduced gradually. The first module, situated at VekTech's California headquarters, involves very little Chinese since the discussion is among Americans, whereas later modules, which involve site visits and negotiations with Chinese business people, utilize Chinese almost exclusively.

Technical Considerations

The programming of *Joint Venture*, which is done completely in HTML and Netscape Navigator's Javascript, constitutes a general-purpose simulation shell (indeed, the shell provides features such as timing and scheduling

not used in *Joint Venture*). This meets the dual design goals of making the program widely available while minimizing the special hardware and software that must be installed to run the simulation. The simulation requires Navigator version 4.7 or better and does *not* currently run on Internet Explorer. Audio materials are delivered in streaming RealAudio format, using the Language Learning Laboratory's RealServer. Since this makes potential users dependent on UIUC resources and could create a delivery bottleneck, we plan also to distribute the multimedia materials on CD.

All simulation content is completely databased. Such architecture allows new simulations to be developed without modifying the program, simply by developing new content and installing it in a database. We judge such flexibility to be essential, because both economic reality and business law within the People's Republic are continually evolving; if the simulation can not be updated quickly and easily, it will soon be obsolete.

Data are entered into text files with data items of different types tagged by a set of keyword labels. This scheme, rather similar to XML, will allow easy conversion of the database syntax to XML when XML become more widely available. Any text editor can be used to author the content. In some cases, the data can contain HTML formatting, so it can even be convenient to use a specialized HTML editor. The drawback of this approach to authoring is that one must learn the tag syntax. Since the simulation requires a number of different databases (interview, library, email, personnel, etc.), this is a non-trivial learning task. In a more complete system, a Web-page authoring interface would bypass the tag syntax and at the same time allow for data validation during input.

As with any complex courseware, one session may not suffice to complete the task. IBM's ASP (Active Server Pages) technology is used to save the simulation status and allow users to resume work where they stopped at the end of the previous session.

The core of the simulation is provided by a handful of interaction formats. Some of these, such as simulated email and an on-line library, provide access to static documents. More central are formats that simulate interactive discussion. As in many on-line fantasy games, this is handled by presenting information (usually information stated by a fictitious person) and allowing students to select a response to that information from a list of predetermined alternatives. Depending on the alternative chosen, a branch is taken to display new information. The information, the alternatives, and the destination branches are all hand-coded into a static database. This approach, though simple and direct, does not allow for any dynamic changes in the database or for inferential capability, such as would be provided by the "knowledge base" techniques of artificial intelligence. All possible branches must be planned for ahead of time, whether or not they will actually be followed. Hence, the data are somewhat exacting and time-consuming to author.

Further Development

Joint Venture shows one way in which new multimedia capabilities can be combined with database technology to provide a heavily contextualized, task-based learning activity. Of course, various extensions and improvements are possible:

1. At present, students' input is restricted to menu choices. This limits the realism of the dialog activities; in addition, it discourages a constructive, creative element in student responses. We intend to replace or supplement menu-driven responding by typed pinyin input using a limited Chinese grammar and vocabulary. Thus, rather than choosing "triangle debt" as a discussion topic, students would have to recall (or infer) that "triangle debt" is an important factor in evaluating potential partners, then type an appropriate Chinese phrase to request information about it. Such active manipulation of knowledge should lead to more effective learning and at the same time making the dialogs more interesting.
2. All modules need to have a deeper model of the task and of student activity. Module 2 (Choosing a Partner) currently keeps track of each item of information requested by the student. This

request history is adequate to allow the program to determine whether the student gathered information efficiently and integrated properly, and to give feedback accordingly. Since student requests have no effect on the environment, no dynamic model of the environment need be maintained. But Module 3, which concerns negotiation, requires more sophisticated modeling. As offers and counter-offers are made, then accepted or rejected, the overall negotiating situation changes continually and the program must keep track of it so that the appropriateness of subsequent moves can be assessed. In addition, students' negotiating moves must be recorded and compared to a negotiating model so that proper instructional feedback can be given for poor moves. Although Javascript is an object-oriented language which can support moderately complex data structures, such complex modeling of the sort we envisage may eventually exceed Javascript capabilities and require interfacing with more powerful languages such as Prolog or Lisp.

3. The realism of *Joint Venture* is currently limited by our rather basic multimedia materials, which utilize audio/still images to simulate site visits in China. Although this implementation is a compromise imposed by our limited resources, a great deal of business and language can undoubtedly be learned from this audio-based design. In the future, however, we would like to replace the combination of audio/still images by video materials created on location. The added concreteness and authenticity of video made in China would greatly increase the attractiveness and realism of the simulation. There is also the possibility of extending the collaboration to use real, rather than fictitious Chinese companies as potential partners, which would allow a much richer, more detailed presentation of the companies. On the negative side, however, it would not then be possible to arbitrarily manipulate the characteristics of each company. This would create pedagogical difficulties when students apply the partner choice model.
4. Better tools should be provided for data authoring, so that authors do not need to learn the internal database syntax. At present, data are validated at the time they are read into the simulation program. An authoring interface would also help to guarantee data validity by checking data as they are entered.
5. In the current version of the simulation, a great deal of programming is devoted to managing the simulation's highly dynamic interface in the context of Navigator's very non-dynamic document object model. With the advent of the dynamic document objects of Navigator 6, it should be possible to simplify greatly all of this display programming in a way that would make display capabilities both more flexible and more robust.

Note

¹ *Joint Venture in China* is a joint project of the CIBER Center (Center for International Business Education and Research) and the Language Learning Laboratory of the University of Illinois. CIBER support for this project derives from the U.S. Department of Commerce. Supervision of the Project is provided by Professor Robert Hart, Associate Director of the UIUC Language Learning Laboratory; Professor Joseph Cheng, UIUC CIBER Director; and Professor C.C. Cheng, UIUC Department of Linguistics (now City University of Hong Kong). Professor Linnei Li, Deakin University Department of English, provided various image materials. Graduate Students who have contributed to the project include Hang Zhang, Justina Hsu, David Chen, and Steven Amjad.

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Language Learning Strategy Use and Learning Achievement by High School EFL Learners: An Analysis of Latent Factor Structure

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Abstract

This paper presents a general idea about language learning strategy use by Japanese high school EFL learners. The Strategy Inventory for Language Learning by Oxford (1990) and a C-test designed for the study were used to elicit the data. With a large number of subjects from various backgrounds and approximately normally distributed test scores, the results can be regarded as being characteristic of high school learners in Japan.

Introduction

Though some lists of language learning strategies have been produced and many surveys conducted following them, there has been little research showing results with sufficient subjects, concerning the total number and their bias of sample extraction. Moreover, the presented results so far often lack enough information for re-analysis or meta-analysis. In order to overcome such problems, this paper aims,

1. to present sufficient data to represent the general tendency of Japanese high school EFL learners' strategy use,
2. to investigate the validity of the defined factors which the Strategy Inventory for Language Learning (Oxford 1990) shows in terms of the learners,
3. to explain the learners' learning achievement though their strategy use.

The SILL (Strategy Inventory for Language Learning), which is one of the most widely used inventories for strategy research, was chosen to conduct the survey in order to compare the current results with preceeding studies and to investigate to what extent Oxford's (1990) six categories can be applied to Japanese high school EFL learners.

The Survey

Since this study was intended to report on the general tendency of Japanese high school EFL learners' strategy use, a large number of learners were required. In total, 23 high schools agreed to participate. As a result, valid data concerning 1,557 learners' strategy use and learning achievement were obtained.

The SILL, which consists of 50 items, was used to measure strategy use. All items were translated into Japanese by three Japanese teachers of English, and revised through a pilot study to some Junior high school students. A C-test was made for the study. A tale from Chang (1969) was selected for the text. SPSS 10.0 and Amos 4.0 were used for data analysis.

The Analyses and the Results

Descriptive statistics from the C-test are shown in Table 1. The distribution of subjects' learning achievement can be regarded as a normal distribution, because skewness and kurtosis are near zero and the scores are well deviated from the mean and the standardised deviation (S.D.) can be judged appropriate. This indicates that the results of the survey can explain Japanese high school EFL learners' characteristics well, as it draws on a large number of samples from different backgrounds.

Table 1. Descriptive Statistics for the C-test Score

	<i>n</i>	Full Score	Mean	S. D.	Skewness	Kurtosis
Total	1557	64.0	30.8	8.4	-0.3	0.3

The learners' responses to each question item of strategy use are shown in Appendix 1, and Appendix 2 presents the correlation matrix, the covariance matrix, and the variances of each variable. Though these tables take much space, I include them here as they are essential for any further research.

Exploratory Factor Analysis (EFA) were computed several times, following the important points of decision (Maeda 2000, Maeda and Yamato 2000). Missing values were eliminated by the pairwise method. Twenty-eight items from SILL were then extracted as being efficient ones for the analysis with six latent factors assumed behind them (Table 2). In other words, 22 variables were eliminated because some of them were too biased or the goodness-of-fit indexes of the model were not acceptable to others. The number of latent factors was decided from the point of view of such indexes and original number six, which Oxford (1990) suggests.

A Confirmative Factor Analysis (CFA) using the ML for the estimation of missing values indicated that the model with six factors and 28 variables is acceptable to explain the obtained data quite well (CFI = .977, RMSEA = .062).

In order to examine the contribution of each factor to the learning achievement, Structural Equation Modeling (SEM) was performed. The variable named "Achievement," which is subjects' C-test score, was added to the previous CFA model. Indexes of goodness of fit indicates that the model (Figure 1) is acceptable in terms of model-fit (CFI=.978, RMSEA=.061). Rectangles refer to observed variables, ovals factors as unobserved variables, and circles errors or a distribution of measurement respectively. Each an arrow with a single point refers to the effect from a variable at the start to another variable at the end. An arrow with points on both ends indicates correlations.

Summary

This survey can be assumed to have accomplished the aims mentioned above. Some points worthy of mention are the following: 1) Generally, subjects don't use the language learning strategies included in the SILL. Therefore, there would remain some possibility to revise the inventory to investigate their strategy use. 2) The six-factor model of Oxford (1990) approximately fits the obtained data. However, some items deviated from this and a reorganisation of the items seemed necessary. 3) Some of the strategy groups showed negative or little effect on learning achievement. Since strategy use was not very frequent, further investigation is needed.

Apart from these remaining issues, the main aim was to present sufficient reliable data to be re-analysed. It is hoped that this paper will help further research on language learning strategies.

Table 2. EFA Result of Six Factors with 28 Observed Variables (ML, Promax Rotation)

QS01	.30	.24	-.05	-.12	.09	.11	.33
QS02	.03	.15	.05	.03	.31	.04	.27
QS03	.24	.04	-.20	-.15	.68	.00	.52
QS04	-.15	-.04	.03	-.05	.74	.06	.44
QS10	.66	.07	.12	-.13	-.06	-.19	.41
QS11	-.21	.07	.36	.26	.25	-.06	.39
QS12	.35	-.02	.34	.06	.10	-.16	.35
QS15	.32	-.09	.25	.08	-.02	-.03	.21
QS18	.42	.32	.00	-.04	-.11	.05	.38
QS19	-.11	.58	-.12	.14	.12	.00	.33
QS20	.08	.80	-.06	-.01	-.13	.00	.52
QS21	.03	.59	-.03	.05	-.03	.01	.35
QS22	-.02	.33	.18	.03	.02	.04	.25
QS23	-.10	.34	.20	.08	.05	.04	.28
QS24	.36	.30	.05	-.06	.09	-.09	.39
QS25	.49	-.13	-.04	.18	.12	.04	.31
QS29	.64	.09	-.14	-.01	.04	.06	.46
QS31	.33	.08	.32	.03	.04	.02	.49
QS32	.32	-.05	.42	.04	.07	-.06	.41
QS33	-.16	-.09	.85	.01	.03	.00	.54
QS34	.03	.06	.64	-.12	-.14	.11	.42
QS38	.12	-.06	.59	-.14	-.12	.28	.50
QS39	-.19	.13	.14	.05	-.03	.60	.46
QS40	-.01	-.05	.11	.02	.11	.65	.59
QS41	.32	-.09	-.06	.04	.11	.43	.43
QS45	.88	-.13	-.14	.14	-.11	.00	.53
QS46	-.10	.17	-.04	.86	-.06	.03	.73
QS48	.40	-.06	-.08	.61	-.13	.04	.47

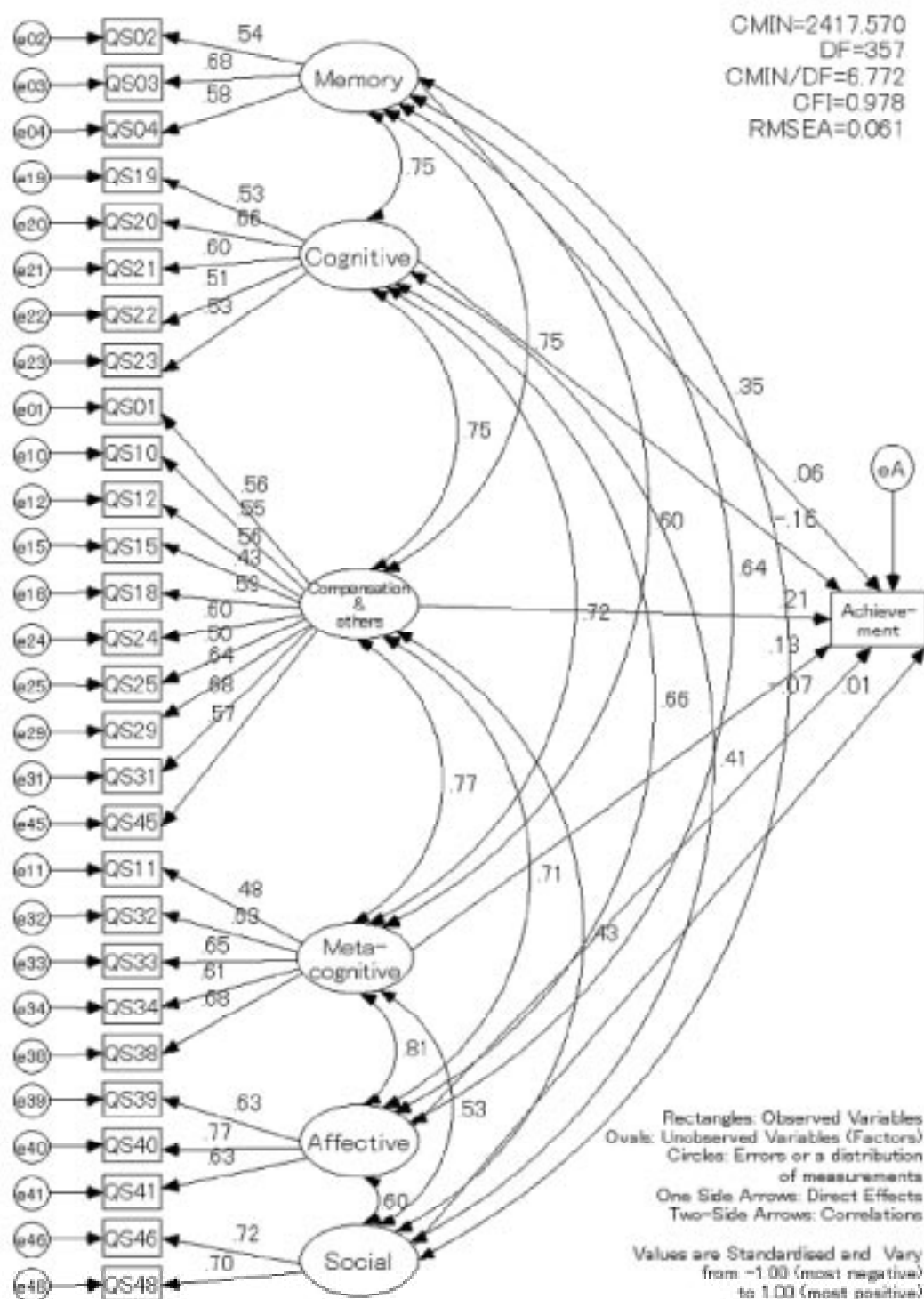


Figure 1. SEM Result (Standardised solution)

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Appendix 1. Frequency Distribution and Descriptive Statistics of Items

item	1	2	3	4	5	n	Mean	S.D.	Skew- ness	Kurto- sis	item	1	2	3	4	5	n	Mean	S.D.	Skew- ness	Kurto- sis
QS01	33.8	28.0	28.6	7.9	1.7	1555	2.2	1.0	0.5	-0.6	QS26	30.6	35.3	22.5	7.5	4.1	1555	2.2	1.1	0.8	0.0
QS02	27.4	39.9	23.4	7.5	1.9	1557	2.2	1.0	0.6	0.0	QS27	23.5	32.7	29.5	10.5	3.9	1555	2.4	1.1	0.5	-0.4
QS03	18.2	26.0	30.7	17.4	7.7	1554	2.7	1.2	0.2	-0.8	QS28	37.5	35.1	20.1	5.7	1.7	1554	2.0	1.0	0.8	0.2
QS04	26.0	32.2	26.8	11.0	3.9	1557	2.4	1.1	0.5	-0.5	QS29	14.9	19.3	36.6	21.1	8.0	1553	2.9	1.1	0.0	-0.7
QS05	44.3	37.1	12.6	4.2	1.9	1557	1.8	0.9	1.2	1.3	QS30	25.0	37.8	25.4	9.4	2.4	1557	2.3	1.0	0.6	-0.2
QS06	52.6	25.9	14.7	5.2	1.5	1555	1.8	1.0	1.2	0.7	QS31	20.8	31.0	33.4	10.8	3.9	1553	2.5	1.1	0.4	-0.4
QS07	64.2	23.2	8.7	2.6	1.3	1557	1.5	0.9	1.8	3.1	QS32	15.6	30.7	35.1	13.9	4.6	1555	2.6	1.1	0.3	-0.4
QS08	37.9	36.5	19.6	4.9	1.0	1553	2.0	0.9	0.8	0.1	QS33	36.0	32.5	23.3	5.7	2.6	1555	2.1	1.0	0.8	0.1
QS09	36.3	32.8	22.5	6.8	1.5	1554	2.1	1.0	0.7	-0.2	QS34	33.3	39.6	19.2	5.7	2.2	1557	2.0	1.0	0.9	0.4
QS10	9.7	13.8	28.6	25.3	22.6	1555	3.4	1.2	-0.3	-0.8	QS35	50.0	35.2	11.3	3.1	0.4	1557	1.7	0.8	1.1	1.0
QS11	30.6	33.0	21.6	8.4	6.4	1552	2.3	1.2	0.7	-0.2	QS36	45.6	35.9	13.4	3.9	1.2	1555	1.8	0.9	1.1	1.1
QS12	24.2	31.2	27.9	11.6	5.1	1556	2.4	1.1	0.5	-0.5	QS37	44.4	31.7	14.9	4.5	4.5	1555	1.9	1.1	1.2	0.9
QS13	23.1	36.0	26.9	10.8	3.2	1555	2.4	1.1	0.5	-0.3	QS38	31.3	28.9	28.3	7.6	4.0	1557	2.2	1.1	0.6	-0.3
QS14	42.0	34.2	16.5	4.9	2.4	1557	1.9	1.0	1.1	0.7	QS39	32.9	34.2	23.1	7.3	2.5	1556	2.1	1.0	0.7	-0.1
QS15	29.6	28.0	23.3	11.9	7.2	1556	2.4	1.2	0.6	-0.7	QS40	33.6	35.5	21.8	6.0	3.2	1554	2.1	1.0	0.8	0.2
QS16	56.9	26.8	11.1	2.8	2.5	1556	1.7	1.0	1.6	2.3	QS41	25.3	27.6	27.8	12.2	7.0	1555	2.5	1.2	0.4	-0.7
QS17	54.5	28.5	11.5	3.0	2.5	1556	1.7	1.0	1.5	2.0	QS42	30.5	30.0	24.7	10.1	4.7	1557	2.3	1.1	0.6	-0.4
QS18	24.4	24.7	26.7	16.1	8.2	1557	2.6	1.2	0.3	-0.9	QS43	68.9	21.5	6.7	2.2	0.7	1556	1.4	0.8	2.0	4.1
QS19	26.6	37.6	23.5	8.9	3.4	1554	2.3	1.1	0.7	-0.1	QS44	58.7	28.0	11.0	1.5	0.7	1556	1.6	0.8	1.4	2.0
QS20	22.8	28.5	30.9	13.4	4.4	1557	2.5	1.1	0.3	-0.6	QS45	16.3	18.0	30.8	21.6	13.3	1556	3.0	1.3	0.0	-0.9
QS21	23.1	29.7	29.6	13.1	4.5	1555	2.5	1.1	0.4	-0.6	QS46	38.5	30.1	19.7	8.0	3.7	1556	2.1	1.1	0.8	-0.1
QS22	22.9	36.5	27.3	10.0	3.3	1555	2.3	1.0	0.5	-0.3	QS47	45.8	32.1	17.0	3.9	1.3	1556	1.8	0.9	1.0	0.6
QS23	32.4	38.4	21.2	6.4	1.6	1555	2.1	1.0	0.7	0.1	QS48	41.6	27.6	20.1	7.4	3.3	1555	2.0	1.1	0.9	0.0
QS24	17.7	25.8	38.6	12.7	5.1	1554	2.6	1.1	0.2	-0.5	QS49	41.4	33.4	18.8	4.6	1.8	1556	1.9	1.0	0.9	0.4
QS25	17.4	21.1	31.7	19.7	10.1	1556	2.8	1.2	0.1	-0.9	•@ QS50	35.3	31.6	23.4	6.6	3.1	1556	2.1	1.1	0.8	0.0

Appendix 2. Correlation Matrix (Lower Triangle), Covariance Matrix (Upper Triangle), and Covariances (Diagonals)

	QS01	QS02	QS03	QS04	QS05	QS06	QS07	QS08	QS09	QS10	QS11	QS12	QS13	QS14	QS15	QS16	QS17
QS01	1.07	0.37	0.44	0.26	0.17	0.06	0.10	0.29	0.19	0.38	0.17	0.32	0.33	0.20	0.28	0.08	0.23
QS02	0.37	0.95	0.37	0.34	0.21	0.17	0.15	0.22	0.18	0.21	0.29	0.28	0.28	0.29	0.19	0.18	0.24
QS03	0.36	0.32	1.38	0.55	0.23	0.14	0.13	0.22	0.27	0.42	0.26	0.41	0.36	0.23	0.24	0.13	0.24
QS04	0.23	0.32	0.43	1.20	0.33	0.15	0.23	0.12	0.27	0.18	0.40	0.26	0.33	0.32	0.20	0.28	0.28
QS05	0.17	0.23	0.21	0.32	0.87	0.16	0.20	0.09	0.22	0.07	0.33	0.17	0.23	0.22	0.14	0.22	0.18
QS06	0.06	0.18	0.12	0.14	0.17	0.97	0.17	0.24	0.15	0.24	0.13	0.25	0.14	0.21	0.17	0.10	0.20
QS07	0.11	0.18	0.13	0.24	0.25	0.20	0.73	0.15	0.18	0.01	0.28	0.19	0.24	0.26	0.19	0.24	0.19
QS08	0.31	0.24	0.20	0.12	0.10	0.26	0.19	0.86	0.22	0.33	0.17	0.35	0.22	0.19	0.30	0.14	0.23
QS09	0.18	0.18	0.23	0.24	0.24	0.16	0.21	0.23	1.00	0.22	0.24	0.32	0.27	0.19	0.23	0.21	0.20
QS10	0.29	0.17	0.29	0.13	0.06	0.19	0.01	0.28	0.18	1.54	0.11	0.56	0.30	0.15	0.30	-0.02	0.14
QS11	0.14	0.25	0.19	0.31	0.31	0.12	0.28	0.16	0.21	0.07	1.36	0.49	0.43	0.52	0.28	0.49	0.28
QS12	0.28	0.25	0.31	0.21	0.16	0.23	0.20	0.34	0.28	0.40	0.37	1.27	0.39	0.40	0.45	0.27	0.34
QS13	0.30	0.28	0.29	0.28	0.24	0.13	0.27	0.23	0.25	0.23	0.35	0.33	1.10	0.46	0.37	0.28	0.33
QS14	0.20	0.30	0.20	0.29	0.23	0.21	0.30	0.21	0.19	0.12	0.45	0.35	0.44	0.99	0.41	0.45	0.41
QS15	0.22	0.16	0.17	0.15	0.12	0.14	0.18	0.26	0.19	0.19	0.19	0.33	0.29	0.34	1.50	0.35	0.40
QS16	0.08	0.20	0.12	0.27	0.25	0.11	0.30	0.16	0.22	-0.02	0.44	0.25	0.28	0.47	0.30	0.91	0.40
QS17	0.24	0.25	0.21	0.26	0.20	0.21	0.24	0.26	0.21	0.12	0.25	0.32	0.32	0.42	0.34	0.44	0.92
QS18	0.35	0.25	0.32	0.20	0.13	0.15	0.07	0.29	0.19	0.36	0.13	0.29	0.31	0.21	0.25	0.12	0.26
QS19	0.20	0.24	0.31	0.27	0.29	0.18	0.23	0.15	0.24	0.15	0.27	0.20	0.29	0.23	0.12	0.21	0.19
QS20	0.38	0.28	0.33	0.27	0.25	0.08	0.16	0.17	0.21	0.29	0.24	0.30	0.29	0.23	0.19	0.16	0.18
QS21	0.26	0.22	0.28	0.26	0.23	0.13	0.18	0.20	0.21	0.22	0.26	0.24	0.31	0.26	0.19	0.21	0.21
QS22	0.19	0.27	0.22	0.21	0.28	0.12	0.21	0.25	0.23	0.17	0.26	0.22	0.24	0.28	0.15	0.19	0.22
QS23	0.26	0.26	0.22	0.26	0.20	0.12	0.23	0.23	0.22	0.15	0.24	0.23	0.31	0.31	0.20	0.23	0.24
QS24	0.36	0.27	0.35	0.27	0.13	0.12	0.11	0.28	0.22	0.35	0.20	0.30	0.32	0.24	0.22	0.15	0.23
QS25	0.21	0.17	0.28	0.21	0.10	0.13	0.16	0.13	0.17	0.25	0.23	0.25	0.26	0.28	0.28	0.16	0.22
QS26	0.14	0.20	0.17	0.21	0.22	0.09	0.24	0.12	0.16	0.10	0.31	0.18	0.23	0.30	0.14	0.30	0.22
QS27	0.19	0.13	0.17	0.11	0.12	0.10	0.05	0.15	0.09	0.13	0.06	0.14	0.13	0.09	0.17	0.08	0.14
QS28	0.21	0.21	0.20	0.26	0.26	0.14	0.22	0.12	0.18	0.08	0.30	0.15	0.28	0.27	0.12	0.24	0.22
QS29	0.34	0.24	0.38	0.21	0.12	0.09	0.06	0.24	0.22	0.40	0.13	0.32	0.29	0.21	0.19	0.07	0.21
QS30	0.25	0.32	0.22	0.31	0.27	0.12	0.22	0.20	0.22	0.13	0.40	0.24	0.37	0.45	0.20	0.34	0.32
QS31	0.38	0.33	0.36	0.30	0.23	0.15	0.16	0.33	0.26	0.34	0.27	0.36	0.36	0.33	0.29	0.24	0.30
QS32	0.27	0.24	0.30	0.25	0.20	0.13	0.13	0.28	0.24	0.30	0.27	0.35	0.30	0.31	0.26	0.22	0.28
QS33	0.18	0.25	0.15	0.28	0.24	0.15	0.26	0.24	0.21	0.15	0.37	0.29	0.24	0.36	0.25	0.36	0.31
QS34	0.28	0.25	0.20	0.18	0.24	0.21	0.20	0.43	0.19	0.24	0.26	0.33	0.27	0.26	0.22	0.22	0.29
QS35	0.16	0.24	0.12	0.26	0.29	0.20	0.29	0.25	0.25	0.09	0.39	0.29	0.30	0.42	0.25	0.39	0.36
QS36	0.29	0.28	0.24	0.28	0.25	0.19	0.23	0.29	0.25	0.19	0.35	0.37	0.34	0.40	0.35	0.40	0.39
QS37	0.29	0.27	0.20	0.27	0.18	0.16	0.23	0.30	0.21	0.19	0.32	0.34	0.28	0.40	0.31	0.38	0.39
QS38	0.31	0.23	0.22	0.21	0.17	0.20	0.19	0.33	0.21	0.28	0.27	0.33	0.26	0.33	0.28	0.24	0.31
QS39	0.23	0.23	0.19	0.26	0.29	0.13	0.25	0.19	0.23	0.11	0.31	0.22	0.28	0.31	0.19	0.23	0.29
QS40	0.30	0.31	0.28	0.31	0.25	0.16	0.27	0.30	0.21	0.19	0.33	0.32	0.36	0.44	0.25	0.29	0.33
QS41	0.30	0.23	0.32	0.26	0.20	0.14	0.17	0.24	0.24	0.27	0.19	0.30	0.32	0.26	0.27	0.15	0.25
QS42	0.14	0.14	0.15	0.19	0.19	0.11	0.17	0.17	0.19	0.14	0.22	0.17	0.19	0.15	0.13	0.14	0.18
QS43	-0.04	0.11	0.03	0.22	0.26	0.12	0.30	0.08	0.20	-0.09	0.31	0.07	0.16	0.28	0.03	0.32	0.20
QS44	0.20	0.15	0.16	0.22	0.14	0.15	0.19	0.18	0.20	0.11	0.19	0.22	0.21	0.23	0.17	0.15	0.26
QS45	0.31	0.19	0.25	0.13	0.04	0.12	0.03	0.24	0.14	0.42	0.07	0.31	0.21	0.15	0.29	0.01	0.18
QS46	0.06	0.21	0.07	0.22	0.27	0.12	0.25	0.09	0.19	-0.03	0.41	0.20	0.27	0.35	0.16	0.35	0.24
QS47	0.20	0.23	0.18	0.20	0.21	0.21	0.25	0.26	0.23	0.14	0.29	0.36	0.30	0.41	0.30	0.32	0.35
QS48	0.18	0.18	0.15	0.12	0.13	0.20	0.17	0.19	0.17	0.11	0.23	0.24	0.26	0.29	0.24	0.23	0.27
QS49	0.16	0.23	0.19	0.24	0.17	0.15	0.20	0.23	0.21	0.14	0.31	0.30	0.32	0.43	0.24	0.32	0.33
QS50	0.26	0.21	0.23	0.26	0.18	0.14	0.23	0.25	0.27	0.20	0.29	0.32	0.30	0.32	0.37	0.31	0.36
C-test	0.13	0.10	0.08	0.08	0.01	-0.02	0.02	0.09	0.01	0.08	0.09	0.08	0.08	0.12	0.10	0.07	0.11

Appendix 2. Correlation Matrix (Lower Triangle), Covariance Matrix (Upper Triangle), and Covariances (Diagonals) (Cont'd)

QS18	QS19	QS20	QS21	QS22	QS23	QS24	QS25	QS26	QS27	QS28	QS29	QS30	QS31	QS32	QS33	QS34	QS35
0.45	0.22	0.44	0.30	0.21	0.26	0.40	0.26	0.16	0.21	0.22	0.41	0.26	0.41	0.29	0.19	0.28	0.14
0.30	0.25	0.30	0.24	0.27	0.25	0.28	0.20	0.21	0.14	0.20	0.26	0.31	0.34	0.25	0.25	0.24	0.20
0.47	0.38	0.43	0.37	0.27	0.25	0.45	0.40	0.21	0.22	0.23	0.51	0.26	0.45	0.37	0.18	0.22	0.11
0.27	0.31	0.32	0.32	0.24	0.27	0.31	0.28	0.24	0.13	0.28	0.27	0.34	0.35	0.28	0.32	0.19	0.24
0.15	0.29	0.26	0.24	0.27	0.19	0.13	0.11	0.22	0.12	0.24	0.12	0.26	0.23	0.20	0.23	0.21	0.23
0.18	0.18	0.08	0.15	0.12	0.11	0.13	0.15	0.09	0.10	0.14	0.10	0.12	0.16	0.13	0.15	0.20	0.16
0.08	0.21	0.15	0.18	0.19	0.19	0.10	0.16	0.22	0.05	0.19	0.06	0.19	0.14	0.12	0.23	0.16	0.20
0.34	0.15	0.18	0.20	0.24	0.20	0.28	0.15	0.12	0.14	0.11	0.25	0.19	0.33	0.27	0.23	0.39	0.19
0.24	0.25	0.24	0.24	0.24	0.22	0.24	0.21	0.17	0.10	0.18	0.25	0.22	0.27	0.25	0.21	0.19	0.20
0.56	0.19	0.40	0.30	0.22	0.18	0.47	0.38	0.13	0.17	0.09	0.57	0.16	0.45	0.39	0.19	0.29	0.09
0.19	0.33	0.31	0.34	0.32	0.27	0.26	0.33	0.38	0.07	0.34	0.17	0.47	0.34	0.34	0.44	0.30	0.38
0.41	0.24	0.37	0.30	0.26	0.26	0.37	0.34	0.22	0.17	0.17	0.41	0.27	0.43	0.41	0.34	0.36	0.27
0.41	0.32	0.34	0.36	0.26	0.31	0.36	0.33	0.26	0.14	0.28	0.35	0.39	0.40	0.33	0.25	0.28	0.26
0.26	0.24	0.26	0.28	0.29	0.30	0.26	0.34	0.32	0.10	0.27	0.24	0.46	0.35	0.32	0.37	0.26	0.34
0.38	0.15	0.26	0.25	0.19	0.23	0.29	0.41	0.18	0.23	0.14	0.27	0.25	0.38	0.33	0.32	0.26	0.25
0.14	0.21	0.17	0.22	0.19	0.21	0.15	0.19	0.30	0.08	0.22	0.07	0.33	0.24	0.22	0.35	0.20	0.30
0.31	0.19	0.19	0.23	0.22	0.23	0.24	0.26	0.23	0.15	0.20	0.23	0.32	0.30	0.28	0.31	0.27	0.28
1.54	0.33	0.55	0.41	0.31	0.27	0.46	0.43	0.20	0.29	0.24	0.57	0.27	0.47	0.46	0.28	0.38	0.15
0.25	1.10	0.46	0.39	0.28	0.27	0.30	0.21	0.30	0.12	0.28	0.27	0.30	0.27	0.27	0.23	0.19	0.23
0.40	0.40	1.24	0.55	0.34	0.32	0.45	0.26	0.25	0.17	0.32	0.40	0.34	0.43	0.33	0.30	0.32	0.17
0.29	0.33	0.44	1.24	0.34	0.32	0.39	0.29	0.26	0.12	0.30	0.34	0.33	0.41	0.31	0.26	0.26	0.17
0.24	0.25	0.30	0.29	1.08	0.33	0.37	0.23	0.24	0.26	0.26	0.26	0.31	0.34	0.33	0.29	0.28	0.20
0.23	0.27	0.29	0.30	0.33	0.93	0.33	0.19	0.22	0.13	0.30	0.23	0.35	0.30	0.28	0.32	0.25	0.23
0.34	0.26	0.38	0.32	0.33	0.31	1.15	0.36	0.20	0.20	0.28	0.47	0.32	0.47	0.39	0.23	0.28	0.18
0.28	0.16	0.19	0.21	0.18	0.16	0.27	1.48	0.38	0.18	0.18	0.50	0.29	0.39	0.41	0.24	0.23	0.23
0.15	0.27	0.21	0.22	0.21	0.21	0.17	0.29	1.16	0.12	0.28	0.29	0.39	0.29	0.25	0.31	0.21	0.25
0.21	0.10	0.14	0.10	0.23	0.13	0.17	0.14	0.10	1.15	0.13	0.30	0.11	0.20	0.13	0.07	0.13	0.08
0.20	0.27	0.30	0.27	0.26	0.31	0.26	0.15	0.26	0.13	0.96	0.24	0.38	0.34	0.27	0.26	0.18	0.25
0.40	0.22	0.32	0.27	0.22	0.21	0.39	0.36	0.23	0.25	0.21	1.31	0.34	0.52	0.43	0.18	0.29	0.13
0.22	0.28	0.30	0.29	0.29	0.36	0.30	0.24	0.35	0.10	0.38	0.30	1.03	0.47	0.36	0.42	0.29	0.32
0.36	0.24	0.37	0.35	0.31	0.30	0.41	0.30	0.25	0.18	0.33	0.43	0.44	1.12	0.52	0.42	0.44	0.26
0.35	0.24	0.28	0.26	0.30	0.28	0.34	0.32	0.22	0.12	0.26	0.36	0.34	0.47	1.11	0.46	0.35	0.24
0.22	0.21	0.26	0.23	0.27	0.33	0.21	0.19	0.28	0.06	0.26	0.15	0.40	0.39	0.43	1.05	0.45	0.33
0.31	0.19	0.29	0.24	0.27	0.27	0.27	0.19	0.20	0.13	0.19	0.26	0.29	0.42	0.34	0.45	0.95	0.29
0.15	0.27	0.19	0.18	0.23	0.29	0.20	0.23	0.28	0.09	0.31	0.13	0.39	0.29	0.28	0.40	0.36	0.67
0.31	0.22	0.28	0.28	0.26	0.29	0.30	0.24	0.26	0.16	0.29	0.26	0.40	0.42	0.36	0.43	0.41	0.52
0.27	0.15	0.26	0.25	0.25	0.31	0.29	0.25	0.21	0.13	0.23	0.26	0.33	0.43	0.38	0.50	0.43	0.41
0.30	0.19	0.29	0.26	0.26	0.28	0.31	0.27	0.18	0.15	0.22	0.31	0.30	0.47	0.38	0.46	0.46	0.34
0.24	0.24	0.28	0.25	0.25	0.25	0.20	0.20	0.25	0.09	0.24	0.22	0.36	0.32	0.30	0.34	0.34	0.38
0.31	0.24	0.28	0.27	0.31	0.31	0.28	0.32	0.24	0.17	0.32	0.33	0.41	0.40	0.36	0.38	0.35	0.40
0.30	0.22	0.27	0.24	0.23	0.26	0.29	0.32	0.17	0.14	0.20	0.35	0.26	0.40	0.33	0.26	0.29	0.25
0.19	0.24	0.22	0.21	0.14	0.17	0.13	0.13	0.16	0.06	0.18	0.19	0.20	0.24	0.22	0.22	0.23	0.22
0.00	0.21	0.10	0.13	0.15	0.25	0.05	0.04	0.19	0.02	0.23	-0.05	0.29	0.12	0.10	0.27	0.20	0.33
0.18	0.19	0.16	0.15	0.15	0.1=9	0.23	0.17	0.14	0.09	0.24	0.18	0.19	0.25	0.25	0.24	0.23	0.33
0.36	0.10	0.23	0.18	0.16	0.10	0.33	0.38	0.07	0.17	0.09	0.47	0.14	0.33	0.34	0.15	0.18	0.13
0.10	0.25	0.14	0.16	0.20	0.27	0.09	0.22	0.28	0.04	0.27	0.10	0.36	0.26	0.23	0.31	0.18	0.39
0.20	0.21	0.21	0.18	0.19	0.28	0.20	0.21	0.21	0.18	0.23	0.21	0.35	0.30	0.29	0.34	0.31	0.41
0.19	0.13	0.13	0.17	0.14	0.16	0.16	0.31	0.19	0.10	0.22	0.23	0.27	0.32	0.27	0.21	0.18	0.29
0.24	0.15	0.17	0.17	0.19	0.27	0.20	0.25	0.28	0.13	0.23	0.22	0.36	0.29	0.27	0.32	0.23	0.34
0.29	0.19	0.27	0.20	0.22	0.25	0.30	0.28	0.23	0.13	0.23	0.27	0.33	0.40	0.37	0.35	0.28	0.34
0.08	0.02	0.06	0.03	0.12	0.06	0.12	0.14	0.07	0.05	0.04	0.17	0.13	0.09	0.09	0.11	0.06	QS36

Appendix 2. Correlation Matrix (Lower Triangle), Covariance Matrix (Upper Triangle), and Covariances (Diagonals) (Cont'd)

Q36	Q37	Q38	Q39	Q340	Q341	Q342	Q343	Q344	Q345	Q346	Q347	Q348	Q349	Q350	C-test
0.27	0.32	0.35	0.25	0.32	0.37	0.17	-0.03	0.17	0.40	0.07	0.19	0.21	0.16	0.28	1.15
0.24	0.28	0.24	0.23	0.31	0.27	0.15	0.09	0.11	0.24	0.23	0.21	0.20	0.22	0.22	0.78
0.26	0.26	0.28	0.23	0.34	0.45	0.20	0.03	0.15	0.38	0.10	0.20	0.19	0.22	0.29	0.79
0.28	0.32	0.25	0.30	0.35	0.35	0.24	0.18	0.19	0.18	0.27	0.21	0.15	0.25	0.30	0.72
0.21	0.18	0.17	0.28	0.24	0.22	0.20	0.19	0.10	0.05	0.28	0.18	0.13	0.16	0.18	0.05
0.17	0.17	0.21	0.14	0.16	0.17	0.12	0.09	0.12	0.15	0.13	0.19	0.22	0.14	0.15	-0.20
0.18	0.22	0.18	0.22	0.24	0.17	0.16	0.20	0.13	0.04	0.23	0.20	0.16	0.17	0.21	0.16
0.24	0.30	0.33	0.18	0.29	0.26	0.18	0.05	0.13	0.28	0.09	0.22	0.19	0.20	0.25	0.67
0.22	0.22	0.23	0.24	0.21	0.28	0.22	0.15	0.16	0.18	0.21	0.22	0.18	0.20	0.29	0.04
0.21	0.26	0.37	0.14	0.24	0.39	0.20	-0.09	0.11	0.65	-0.04	0.16	0.15	0.16	0.26	0.83
0.37	0.41	0.35	0.38	0.40	0.26	0.29	0.28	0.18	0.11	0.53	0.31	0.30	0.35	0.36	0.86
0.38	0.42	0.41	0.26	0.38	0.41	0.22	0.06	0.20	0.43	0.25	0.38	0.30	0.33	0.38	0.76
0.32	0.31	0.30	0.30	0.40	0.40	0.22	0.13	0.18	0.28	0.32	0.29	0.30	0.32	0.33	0.67
0.36	0.43	0.36	0.31	0.45	0.31	0.17	0.22	0.18	0.19	0.38	0.38	0.32	0.42	0.34	0.97
0.39	0.40	0.37	0.23	0.32	0.40	0.18	0.03	0.17	0.44	0.21	0.34	0.32	0.29	0.48	0.99
0.34	0.39	0.25	0.23	0.29	0.17	0.16	0.24	0.12	0.01	0.37	0.28	0.24	0.29	0.31	0.55
0.33	0.41	0.33	0.28	0.33	0.28	0.20	0.15	0.20	0.22	0.26	0.31	0.28	0.31	0.37	0.92
0.34	0.36	0.41	0.31	0.41	0.44	0.27	0.00	0.18	0.56	0.14	0.23	0.26	0.28	0.38	0.82
0.21	0.17	0.22	0.26	0.27	0.27	0.29	0.17	0.16	0.13	0.29	0.20	0.15	0.15	0.21	0.21
0.28	0.32	0.35	0.32	0.32	0.35	0.28	0.09	0.15	0.32	0.18	0.22	0.16	0.18	0.32	0.54
0.28	0.30	0.32	0.29	0.32	0.32	0.27	0.11	0.13	0.25	0.20	0.19	0.21	0.18	0.24	0.30
0.24	0.28	0.29	0.27	0.33	0.28	0.17	0.12	0.12	0.21	0.23	0.18	0.16	0.20	0.24	1.04
0.25	0.33	0.29	0.25	0.31	0.29	0.19	0.18	0.15	0.12	0.28	0.26	0.17	0.26	0.26	0.51
0.29	0.34	0.36	0.22	0.31	0.37	0.16	0.04	0.19	0.44	0.11	0.20	0.19	0.21	0.34	1.09
0.27	0.33	0.36	0.25	0.40	0.46	0.18	0.04	0.17	0.58	0.29	0.24	0.42	0.30	0.36	1.42
0.25	0.25	0.21	0.28	0.27	0.22	0.20	0.16	0.12	0.09	0.34	0.21	0.22	0.29	0.27	0.60
0.15	0.15	0.18	0.11	0.19	0.18	0.08	0.02	0.07	0.23	0.05	0.18	0.12	0.14	0.15	0.41
0.26	0.25	0.23	0.24	0.32	0.23	0.20	0.17	0.19	0.12	0.29	0.21	0.24	0.22	0.24	0.30
0.27	0.32	0.39	0.26	0.39	0.48	0.24	-0.04	0.17	0.67	0.13	0.22	0.28	0.24	0.32	1.63
0.36	0.37	0.33	0.37	0.43	0.32	0.23	0.23	0.16	0.18	0.40	0.33	0.30	0.36	0.36	1.10
0.40	0.50	0.54	0.35	0.44	0.50	0.29	0.09	0.21	0.44	0.30	0.30	0.37	0.30	0.44	0.79
0.35	0.43	0.44	0.32	0.39	0.42	0.26	0.08	0.21	0.45	0.26	0.29	0.31	0.28	0.42	0.83
0.40	0.55	0.51	0.36	0.41	0.32	0.26	0.21	0.19	0.20	0.35	0.32	0.24	0.32	0.38	0.95
0.36	0.46	0.49	0.35	0.35	0.34	0.26	0.15	0.18	0.23	0.19	0.28	0.19	0.22	0.29	0.47
0.38	0.36	0.31	0.32	0.34	0.25	0.20	0.21	0.22	0.13	0.35	0.31	0.26	0.27	0.29	0.45
0.81	0.55	0.45	0.34	0.41	0.32	0.19	0.15	0.21	0.24	0.29	0.31	0.29	0.31	0.37	0.82
0.56	1.17	0.66	0.39	0.49	0.39	0.19	0.17	0.26	0.30	0.30	0.33	0.29	0.32	0.46	1.60
0.45	0.56	1.20	0.46	0.52	0.46	0.29	0.11	0.26	0.37	0.22	0.36	0.30	0.30	0.40	1.37
0.37	0.35	0.41	1.06	0.54	0.44	0.35	0.19	0.22	0.21	0.38	0.29	0.27	0.29	0.31	0.58
0.45	0.44	0.46	0.51	1.07	0.60	0.25	0.18	0.22	0.36	0.38	0.37	0.35	0.40	0.40	0.73
0.30	0.30	0.35	0.36	0.49	1.42	0.39	0.09	0.28	0.58	0.31	0.37	0.39	0.36	0.44	1.17
0.18	0.15	0.24	0.30	0.21	0.29	1.30	0.17	0.23	0.21	0.29	0.28	0.30	0.19	0.22	0.19
0.22	0.21	0.13	0.24	0.23	0.09	0.20	0.60	0.19	-0.11	0.29	0.19	0.16	0.18	0.16	-0.14
0.30	0.30	0.29	0.26	0.26	0.29	0.25	0.31	0.64	0.20	0.15	0.23	0.17	0.18	0.24	0.09
0.21	0.22	0.27	0.16	0.27	0.39	0.14	-0.12	0.20	1.58	0.17	0.34	0.45	0.32	0.40	1.38
0.29	0.25	0.18	0.33	0.33	0.24	0.23	0.34	0.17	0.12	1.23	0.37	0.62	0.42	0.36	0.36
0.37	0.33	0.36	0.30	0.38	0.33	0.27	0.27	0.30	0.29	0.36	0.87	0.35	0.47	0.37	0.56
0.29	0.25	0.25	0.23	0.31	0.30	0.24	0.18	0.19	0.33	0.51	0.34	1.21	0.46	0.44	0.84
0.36	0.30	0.28	0.29	0.39	0.31	0.17	0.24	0.23	0.26	0.39	0.51	0.43	0.94	0.46	0.67
0.39	0.40	0.35	0.28	0.36	0.35	0.18	0.19	0.28	0.30	0.31	0.37	0.38	0.44	1.12	0.53
0.11	0.18	0.15	0.07	0.08	0.12	0.02	-0.02	0.01	0.13	0.04	0.07	0.09	0.08	0.06	70.54

Note: Correlation matrix is shown in the lower triangle, covariance matrix in the upper triangle, and variance in the diagonals.

Laputa Project: The Potential of the 3D Interactive Education System in College English Education

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Abstract

In an effort to apply a form of networked multimedia to college English education, we set up the “Laputa Project” in April 1999. In this project, we have been developing the educational application of the 3D Interactive Education System (3D-IES). The current study examined the effectiveness of the “3D virtual reality chat,” one component of the 3D-IES, by focusing on its effects on “proficiency” and “class evaluation.” The improvement in students’ English proficiency was examined in the pretest-posttest design. Furthermore, class evaluation questionnaires were administered to the students at the end of the treatment. The two stages of experiments revealed that no difference was observed between the 3D-IES classes and the regular English classes in terms of the increase in students’ English proficiency. However, the more positive class evaluation was found for the 3D-IES classes and, in particular, for the class that emphasized the use of 3D virtual space.

Introduction

In April 1999, we set up the “Laputa Project,” supported by a grant for Kyushu University Interdisciplinary Programs in Education and Projects in Research Development. This project is intended to develop the educational application of the Three-Dimensional Interactive Education System (3D-IES) in collaboration with the Nomura Research Institute (NRI), NRI Network Communications, SONY, and SONY Marketing. The 3D-IES has three major components: (1) Chat in the 3D virtual reality space, (2) Nettutor (networked TOEIC exercises and sample tests), and (3) Live lecture. Of the three, the 3D virtual reality chat has been applied to several English classes offered at Kyushu University, and its effectiveness is being investigated. While the emerging outcomes are still exploratory in nature, we will present parts of our findings here in an attempt to construct more effective tools for college English education. Henceforward, we will refer to the 3D virtual reality chat as the “3D-IES.”

“Chat” Function in the 3D-IES

Unlike chat systems presently available in network environments, the 3D-IES provides us with opportunities to “chat” with communication counterparts in 3D virtual reality space (see Figure 1). Specifically, we created a “virtual campus” on the Web (SONY Community Place browser), which currently consists of three chat rooms (Virtual Campus, Virtual Lab, Tunnel Park). Students can go into any of these chat rooms by projecting themselves onto their “avatars,” graphically created animation characters. They can communicate in English with any other

chat participants in that particular space. Students use their own “handle names” which guarantee them anonymity. This creates an environment in which students can express themselves freely without being embarrassed by what they said under their own real identification. Currently, “chat” in the system is text-based, but research is under way toward the realization of “oral chat.”

The Study

The current study was undertaken through two stages of experiments. Experiment 1 was conducted to examine the effectiveness of the 3D-IES classes in comparison with regular English classes that did not make use of this particular system at all. In Experiment 2, we compared the performances observed in the following two types of classes: the “integrated class,” which attempted to use the 3D space maximally along with the chat activities, and the “chat-oriented classes,” which focused on the chat activities. In both experiments, the targets of the comparison were the effects on “proficiency” and “class evaluation.”



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Figure 1. 3D Space and Chat Logs

Experiment 1 (3D-IES classes vs. Regular classes)

Research Questions:

1. Does the 3D-IES promote improvement in students' English proficiency?
2. Does the 3D-IES influence students' class evaluation?

Method: First, all the subjects were students at Kyushu University, Japan. They took general English classes from the authors in the year 2000. Table 1 summarizes the classes our subjects were assigned to. The 3D-IES classes took place in the computer labs.

Second, the aim of both the 3D-IES classes and the regular classes was the same: teaching English discussion and debate used the same treatment material: “Taking Sides” (Motegi, et al. 2000), a textbook for discussion and debate in English.

Table 1. Class assignment for Experiment 1

Class Type	Number	Major
3E-IES	86 (5 classes)	Literature (16), Science (20), Medicine (19), Science (16), Law (15)
Regular	86 (2 classes)	Pharmacology (39), Engineering (47)

Number of students shown in parenthesis.

Third, as the experimental materials, we used (1) the reading section of SLEP (the Secondary Level English Proficiency developed by the ETS) for Research Question 1 and (2) a class evaluation questionnaire for Research Question 2. The questionnaire includes the following questions:¹

Q5: Did you enjoy this class?

Q6: Did you feel able to express yourself in English activity in this class?

Q7: Did the classroom tasks hold your attention throughout the class?

Q8: Do you think you were able to improve your overall English proficiency in this class?

Q9: Do you think you were able to improve your English production skills in this class?

These questions could be answered according to a 5-point scale .

Results and Discussion; Figure 2 indicates the results of the pretest/posttest means of the SLEP (full score = 75) for the 3D-IES classes and the regular classes. For both groups, the posttest scores were substantially higher than the pretest scores.² However, the results of a two-way repeated measures ANOVA revealed that there was not a significant interaction effect of “Group x Proficiency” ($F(1, 153) = .891, p = .3466$). This statistically indicated that the students in these two types of classes could increase their English proficiency equally. We further performed a one-way ANCOVA with the pretest scores as a covariate. However, we could not detect any significant treatment effects between the 3D-IES and the regular classes ($F(1, 152) = 1.302, p = .2557$). Based on this finding,

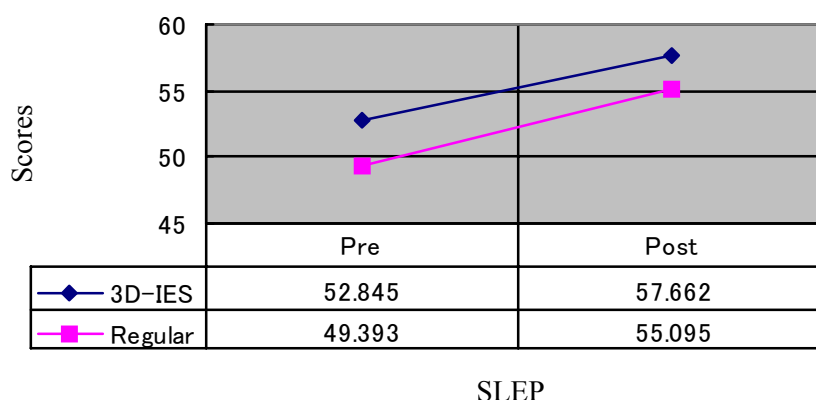


Figure 2. 3D-IES vs. Regular (Proficiency)

we cannot conclusively claim that the 3D-IES is more effective than the regular instruction in improving students' English proficiency (for Research Question 1). At the same time, we should also note some possible intervening variables affecting the results. For example, the forms of instruction examined here might not have caused the increase in the students' proficiency; such an increase may be the result of more effective instruction in the other English classes in which the students participated in this particular semester. Hence, we cannot definitely contend that the 3D-IES is as effective as regular instruction in improving students' proficiency or vice versa.

The findings for the class evaluation will be presented by focusing on Evaluation Questions 5, 6, 7, 8, and 9. For all five questions, the class evaluation from the 3D-IES classes surpassed that of the regular classes, and the differences here were all significant at $p < .0001$ (see Figure 3). Hence, we can definitely claim that the 3D-IES can enhance the students' class evaluation to a greater extent than the regular instruction (for Research Question 2). In particular, the highly positive responses to Questions 5, 6, 7, and 9 indicate that the 3D-IES enables students to concentrate on their classroom tasks to a greater extent and provides them with more opportunities to express themselves in English than regular English classes. This further suggests that more active interaction was realized in the 3D-IES classes between the instructor and students and among students themselves.

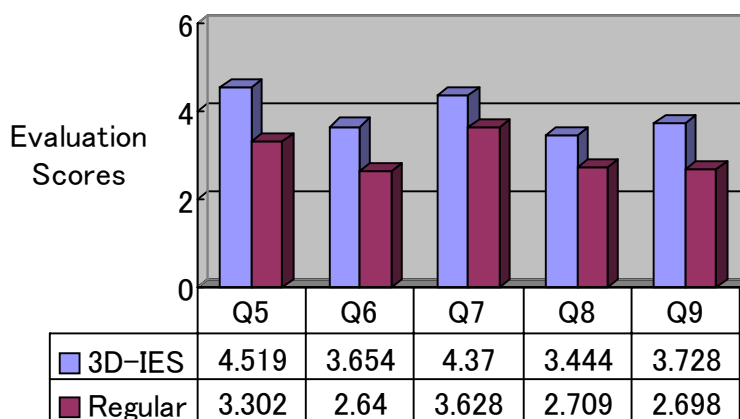


Figure 3. 3D-IES vs. Regular (Class Evaluation)

In fact, the students in the 3D-IES classes commented in the class evaluation questionnaires (Questions 10 and 14) that they could gain more opportunities for self-expression in English.³ But it should be noted that this evaluation cannot lead us to a definite conclusion concerning the real cause of the larger amount of English self-expression by the 3D-IES students: they might feel like this simply because of the discussion/debate activities themselves or they might do so because of the computer-based chat. Furthermore, we should note that the 3D-IES students highly evaluated the course contents in that they felt that they could substantially improve their fluency in English. This would probably be because of the anonymity realized by "avatars." All these descriptive data support the finding that the students using the 3D-IES did enjoy this kind of computer-based interaction in their English classes. In light of this, it would be advisable to encourage the introduction of the 3D-IES to college English classes, where monotonous, unilateral lecture-type lessons are still often observed.

Experiment 2 (Integrated Class vs. Chat-Oriented Classes)

Research Questions

1. Does the use of 3D virtual space promote improvement in students' English proficiency?
2. Does the use of 3D virtual space influence students' class evaluation?

Method: All the subjects were students at Kyushu University, Japan. They took general English classes from the authors in the year 2000. Table 2 summarizes the classes.

All the classes were relatively small and took place in the computer labs. The chat-oriented classes were the same classes used for Experiment 1. They mainly used the text-based chat for discussion and debate. The integrated class used not only the chat but also the virtual reality space, and giving the students various tasks such as role playing activities in the virtual reality space.

As the experimental materials, we used (1) the reading section of SLEP for Research Question 3 and (2) a class evaluation questionnaire for Research Question 4.

Table 2. Class Assignment for Experiment 2

Class Type	Number	Major
3E-IES	22 (1 classes)	Agriculture (22)
Regular	86 (5 classes)	Literature (16), Science (20), Medicine (19), Science (16), Law (15)

Number of students shown in parenthesis.

Results and Discussion: Figure 4 shows the pretest/posttest means of SLEP for the integrated class and the chat-oriented classes. The results of a two-way repeated measures ANOVA demonstrated that there was a significant interaction effect of “Group x Proficiency” ($F(1, 90) = .6312, p < .05$). In other words, the students in the chat-oriented classes were able to increase their proficiency to a significantly great extent, whereas the students in the integrated classes could not do so. The results of a one-way ANCOVA with the pretest scores as a covariate also confirmed this tendency ($F(1, 88) = 5.325, p < .05$). Hence, we could argue that the use of 3D virtual space does not necessarily promote improvement in students’ English proficiency (for Research Question 3). A possible explanation here would be that the students in the chat-oriented class had to “read” the chat conversation to a greater extent than the students in the integrated class did. Because the proficiency measure here was the reading section of SLEP, the increase in the SLEP scores for the chat-oriented classes may precisely reflect the increase in their ability to “read” English.

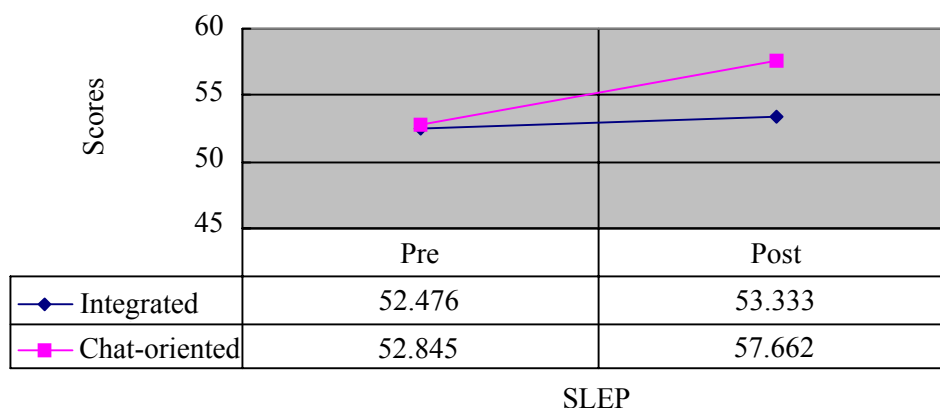


Figure 4. Integrated vs. Chat-Oriented (Proficiency)

Related to Research Question 3, we further analyzed the classroom evaluation in the framework of “integrated vs. chat-oriented” by focusing on Evaluation Questions 13-2 (Did 3D-space/avatars contribute to the improvement in your English production skills?) and 13-3 (Did “chat” contribute to the improvement in your English production skills?). The notable findings here were: (1) the evaluation of the 3D-space/avatars was relatively high with more prominence in the integrated group (Means for “integrated” = 3.773, Means for “chat-oriented” = 3.173, significant difference in the means at $p < .05$); and (2) the students in both groups thought equally that the computer-based chat contributed to the improvement in their English production skills (Means for “integrated” = 4.636, Means for “chat-oriented” = 4.235, no significant difference in the means ($p = .0563$)). In the integrated class,

however, it was also found that there was a significant difference between the means for the 3D-space/avatars and the means for “chat” at $p < .01$ with the larger mean for “chat.” All of these indicate that the key to the improvement in English production skills is the chat task, not the presence of 3D-space/avatars. It seems that the 3D-space/avatars only contributed to the classroom tasks inasmuch as they produced more realistic interactional environments. In this sense, we could interpret “chat” as having a primary role in developing students’ English abilities, and “3D-space/avatars” as having a secondary role in this respect.

The results for the class evaluation (Questions 5 – 9) were summarized in Figure 5. Three points ought to be noted here. First, the integrated group was more likely to feel able to express themselves in English actively than the chat-oriented group (significant differences in the means for Questions 6 and 9). This tendency might partly be induced by the topic selection for the activities. Specifically, the topics selected in the integrated class were concerned with the students’ daily lives and thus it was easy for them to express themselves in English. On the other hand, the topics chosen in the chat-oriented classes were social topics (e.g., “Should Nuclear Power Plants be Abolished in Japan?”) and thus the students might have some difficulty in expressing their opinions about them in English, leading them to a less active involvement in the tasks.

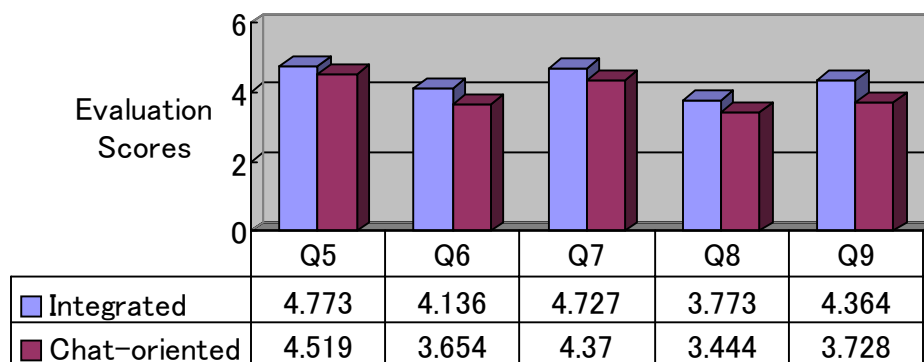


Figure 5. Integrated vs. Chat-Oriented (Class Evaluation)

Second, the classroom tasks held the integrated students’ attention throughout the class to a significantly greater extent than the chat-oriented group (Question 7). This is probably because the integrated group had to simultaneously attend to both the 3D space and the chat. Furthermore, variation in the tasks for the integrated class might lead to this result.

Third, both the integrated and the chat-oriented classes showed that they failed to increase their “overall” English proficiency (Question 8). The possible explanation here would be that the activities in these two groups did not require listening and speaking abilities and thus the students did not feel an improvement in the four language skills as a whole. The finding here is further supported by the descriptive data available from the class evaluation questionnaires. Some students commented that they were disappointed about lack of “oral” communication and showed their interest in communication using their listening and speaking skills.

On the whole, however, it could be argued that the presence of 3D virtual space well motivates students to learn English, as shown in the results for Evaluation Questions 6, 7 and 9. Hence, we could conclude that the use of the 3D space positively influences students’ class evaluation (for Research Question 4).

Conclusion

The present 3D-IES system failed to promote the improvement of students’ English proficiency. In fact, no difference was observed between the 3D-IES classes and the regular classes in the increase in students’ proficiency. This tendency might further be supported by the students’ class evaluation on the “improvement in overall

English proficiency.” Since the present 3D-IES provides text-based chat only and thus does not require listening and speaking skills, the obtained results are understandable. If “oral chat” is incorporated into the future system, however, a more balanced course design would be achieved. Furthermore, “oral chat” will surely solve the following major problems identified in the students’ descriptive data: (a) students’ poor typing skills hindered the text-based chat and (b) the text-based chat took more time (than oral communication). In view of this, we eagerly await the emergence of sound-based chat in the near future.

The more positive class evaluation was found for the 3D-IES classes and for the integrated class in particular. This suggests that the 3D-IES can surely contribute to the enhancement of students’ motivation to learn English and, in this sense, its introduction to college English classes should be encouraged. However, we should also note some problems which need to be solved urgently. Three of them will be mentioned here. First, we currently do not have a system for feedback to students’ English. The descriptive analysis revealed that some of the students in the 3D-IES classes were concerned about receiving little or no linguistic correction from the instructor in the chat. We need to keep in mind that some students do expect to improve their English in “accuracy” as well as in “fluency.”

Second, the present 3D-IES interaction does not involve native speakers of English. Some students voiced fears concerning the possible ineffectiveness of communication among non-native English speakers only in their attainment of higher English proficiency. Hence, we will need to establish a more extended communication network involving native speakers of English (and preferably people with various linguistic/cultural backgrounds).

Third, the present study suggests that “chat” plays a primary role and “3D-space/avatars” a secondary role in improving students’ English production skills. Some students even pointed out that the 3D virtual reality space is presently unnecessary for the chat. Hence, we need to explore the role of the 3D virtual reality space so that the greater connection could be established between the chat and the 3D space. These problems above ought to be solved before we go on to future plans for an application of the 3D-IES to foreign language education in general at Kyushu University.

Notes

- 1 The questionnaire contained a total of 14 questions. However, we primarily focused on Questions 5 – 9 in this study.
- 2 The post-hoc test showed that there were significant differences between the pretest and the posttest scores for the 3D-IES classes ($F(1, 70) = 46.338, p < .0001$) and for the regular classes ($F(1, 83) = 84.292, p < .0001$).
- 3 Similar comments were obtained from the students in the regular classes.

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Large-Scale Implementation of Computer-Based, Multimedia Achievement Testing

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Discussion

As technology has penetrated the classroom, bringing multi-media into the teaching of languages, achievement testing has often lagged behind, relying on traditional paper and pencil, and emphasizing reading and grammatical skills rather than the oral and listening proficiencies (Gonzalez Pino, 1989, p. 487). In an early attempt to enhance the testing experience for first- and second-year Spanish students, faculty at Brigham Young University began bringing classes into the language lab for group achievement testing, where audio, and sometimes video, could be incorporated as test prompts. To deal with the large numbers of students being tested, computer scan sheets were printed to ease the burden of test correction. These procedures were satisfactory for a time, but as computer technology advanced it became apparent to many that achievement testing could be enhanced to provide a much more complete assessment using seamlessly integrated multi-media.

The opportunity to experiment with computer-based, multi-media testing presented itself in 1994, when the traditional audio language lab at BYU was replaced with a hybrid audio-computer configuration. Almost immediately work was begun to computerize the scan sheet tests, and digitize the audio and video. Over the past seven years, BYU has continued to improve the methods of creation and delivery of multi-media, computer-based testing for not only Spanish, but other language and humanities classes as well. Achievement tests now assess all language skills by including both written and oral responses prompted by the appropriate media: text, graphic, audio, or video.

Benefits of a Separate, Multi-media Language Testing Center

The transformation of the traditional language lab into a central, multi-media language testing center has brought about several benefits—some of which were unanticipated:

Increased class time: Immediately upon adopting the new computer-based testing program, Spanish instructors found they had ten class periods previously used for in-class testing returned to them for teaching activities. This is a significant addition of classroom contact hours in which communicative skills can be improved.

Test security and storage: Security of test items is maximized since there are no copies floating around, and the file cabinets that once housed thousands of test forms and copies are no longer needed.

Increased flexibility in scheduling: Spanish students may now take their chapter, midterm and final exams over a two-day period providing some flexibility in study and scheduling.

Equality in testing surroundings and delivery of prompts: Each student is assured that the test will be presented in the same way (barring the occasional computer problem), within quiet and monitored surroundings.

Assessment of all Language Skills: The multi-media nature of the computer-based tests balances what use to be mainly reading comprehension and grammar understanding. Now items include a great deal of digitized audio for listening comprehension, maps and graphics for geographical and spatial

understanding, and video for both listening and visual comprehension. Student responses are no longer confined to the traditional fill-in-the-blank, and multiple choice answers, but also to oral open ended written essays.

Administration and Management of the Language Testing Center

To administer the operation of a 34 station testing center open 15 hours per day obviously requires full-time supervision. The testing center staff is comprised of one full-time administrator who schedules the lab, sets policy and operating procedures, hires and trains part-time lab proctors, and assists the faculty with test creation. Several part-time student employees monitor the lab, proctor tests and assist in test data entry and programming.

To accommodate the scheduling of the 6,000 Spanish tests given each semester, a computer-based sign up program has been created that automatically lists the test days and times available to the students. The program checks the class enrollment to verify the student is allowed to take a particular test, and provides the means for the student to modify the scheduled test time if necessary through the use of a personal password. Students may sign up for the next test up to seven days in advance.

At the scheduled test time the student presents a photo ID card to the test proctor who verifies through the computer system that the student has indeed signed up for that test time. The student is then seated at a computer, which has a menu showing all tests available for the day. The student chooses the appropriate test and the computer verifies enrollment, name and student ID number before beginning the test. After running a sound check for headset and microphone volumes, the computer presents the items to the student without feedback. Throughout the test the computer constantly saves the test information so that in case of computer problems the test can be resumed where the student was last working. There is no score given the student at the end of the test because the raw computer score does not include any essay scores that must be read and scored by the instructor.

The instructor prints out the test results for each section taught and then is able to go over the responses checking for any answers that might be correct, but counted wrong by the computer, as well as scoring the essay and short answer responses. A set of transparencies showing the test questions as they appeared on the computer is provided to the instructor so that the test may be reviewed in class.

Template Test Creation Program

To facilitate the large number of tests to be created, edited, and revised, a template program has been developed that sets up test items through step-by-step instructions. After choosing the item response type, the program provides simple procedures for inserting textual and media files. The program builds the test items and prepares the test without the instructor needing to know the underlying programming language.

Conclusion

To both improve the quality and breadth of language assessment, as well as to expedite the administration of thousands of tests, BYU has created a separate, computer-based, multimedia, testing center. Programs to create, administer, and schedule these tests have been written to aid the instructors, testing center administrator, and the test proctors throughout the testing process. Thanks to this system, instructors have increased class time and students have more flexibility in test scheduling. Of most importance, the skills tested are now more complete with items assessing listening, reading, writing, grammar, and speaking. The result is a more valid and interesting testing experience.

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Learning English Through Web-Based MOO Activities

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Abstract

Since the early nineties, educational Multi-User Dimensions Object-Oriented (MOO) has captured language teachers' attention as they provided learners with a collaborative and autonomous learning environment. However, technological limitations prevented language teachers from adopting MOOs to language learning. Today, with the advent of web-based (webbified) MOO, users are allowed to readily use the MOO, thereby the efficiency of language learning is considerably enhanced. This study investigates the effectiveness of MOO as a tool for learning English. SchMOOze University MOO was employed because this MOO server allows enCore Xpress interface which provides the telnet/java window in a web browser. MOO was proved to be a very effective form of on-line interaction that can be used for foreign language learning and culture by providing a highly encouraging environment for autonomous and collaborative learning in a very fun and playful way.

Introduction

The importance of the Internet services as a tool for foreign language learning has been widely recognized by providing a forum for the discussion and exchange of ideas. One of those services, MUD Object-Oriented (MOO) is a web-accessible text-based environment that allows language learners to connect and interact with other users from different parts of the world in real time. This service is especially a valuable system by which foreign language learners may converse and move around a virtual world, thereby offering an environment for more spontaneous and synchronous use of language. In this study I'll introduce and examine the advantages of using a web-based MOO for foreign language learning and teaching.

What is MOO?

MOO stands for MUD Object-Oriented. MUD itself is an acronym for Multi-User Dungeon. As the name suggests, MUD started as a game software which requires several participants at once. As the educational use of MUDs began to spread, some educators began to use MUD for Multi-User Domain because they felt that this interpretation of MOO is more accurate than Multi-User Dungeon.

Then, what is MOO? It is a second generation MUD, a piece of software, a text-based environment, that allows a number of users to show up at a single Internet site and interact with each other in real time. Therefore, on a MOO, students can smile, wave, and say things just as they do in real life; they can also create, describe, and manipulate objects such as rooms, pets, and clothing that are either imaginary or based on real life. This provides users with the opportunity to extend and fashion the environment according to their own needs, thus making MOO activities more meaningful, engaging, and stimulating. This is not possible in other Internet programs. MOO is also a database of information responding in real time to commands entered by a user.

Advantages of MOO for Foreign Language Learning

Many researchers have documented the advantages of MOO use in language learning and teaching (Higgins, 1997; Schwienhorst, 1998; Warschauer, 1996). Their reasons for choosing a MOO as an effective tool for foreign language learning and teaching can be summarized by the following three principles: communication, collaboration, and constructions (Danford, 1999).

First, communication. MOOs provide both synchronous and asynchronous mechanisms of communication, both privately and to groups of individuals. These levels of communication provide opportunities for student contacts that extend beyond what is capable in the traditional classroom. Furthermore, synchronous communications on the web-based MOO, which we will look at later, include not only simple chat, but also can include simultaneous viewing of MOO objects and external web sites.

Secondly, collaboration. Following Vygotskian (1978, 1986) tradition, the importance of collaboration in learning has gained momentum in recent years. MOO collaborations can be easily accomplished; joint ownership of objects as well as shared written spaces provide unique situations for student/student and student/professor interactions. Depending upon application, collaborative writing and editing can be accomplished in the classroom setting as well as in independent group work. MOO collaborations can extend beyond the scope of the usual classroom experience. For example, students can benefit by interactions and collaborations with students located in other geographical areas and representing divergent cultures. Both formal collaborations like group assignments and informal collaborations among students interacting with others socially enhance the affective learning experienced by all.

Thirdly, constructions. MOO constructions, whether produced individually or by collaboration, can include written materials and web pages, with embedded multimedia resources (graphics, animations, sound, video). MOO constructions can persist and thus be used and modified over time. These constructions, from simple note objects (like blank pieces of paper upon which one can write) to complicated interactive MOO objects, can be designed to meet specific academic or pedagogical objectives.

There are other advantages in using MOO for language learning purposes. Conversations during a MOO session can easily become non-linear. In real life conversation, the turns taken by people are linked together in a sequential chain. In contrast, during a MOO session, people can post responses to someone's assertion at any point of conversation they want. Therefore, there are multiple lines of thought to reflect upon, and more is happening all at once for the language learners.

MOO conversations have a further advantage in that they can help overcome learners' psychological barriers. Some students simply feel more comfortable conversing via the computer screen. They feel less self-conscious about their own personal appearance and more confident that they will be judged based upon their intellectual merit. In addition, outside of conversation, a MOO environment is a creative space in which students can exercise their imagination in interesting ways.

Web-Based MOO

Thanks to just mentioned advantages, educational MOOs have captured language teachers' attention since the early nineties. During these early years, however, users had to master considerable technology to use the MOO including basic MOO commands and MOO programming usually through telnet connection at slow speed. This prevented language teachers from adopting MOOs to language learning. Today, however, with the advent of web-based MOO, users are allowed to readily use the MOO with a minimal number of commands to be effective in multimedia dimension thereby the efficiency of language learning is considerably enhanced.

The Web-based MOO client I used was enCore Xpress, a new web-based MOO client that brings a feature-rich, and graphically enhanced hypertextual interface to your MOO experience. It incorporates the power of MOO, HTML, Java and JavaScript into one easy to use application. EnCore Xpress resides remotely on the MOO you are using, and you run it in your web browser, thus, there is nothing to download or install.

Here's a figure showing enCore Xpress.

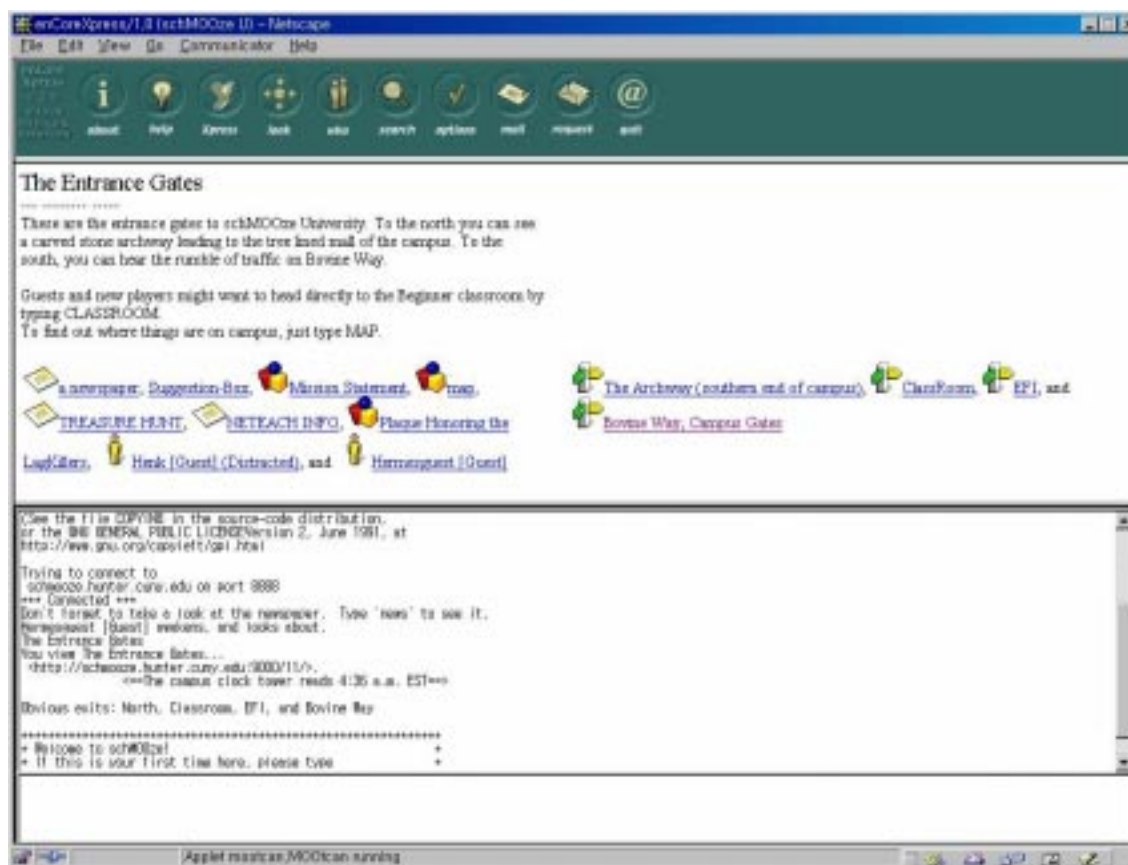


Figure 1. Sample page from enCore Xpress

The enCore Xpress client window has three areas. On top is the menu area with buttons for various MOO applications such as the Help Browser, the Web Browser, the Mail Browser, and Editor. In the middle, there is chat area where text that users type is displayed. At the bottom, there is the hypertext output area which shows descriptions of rooms, players, and other objects that users explore.

An Application – SchMOOze University MOO

During the spring semester of this year, I adopted MOO to a English learning class at Kyung Hee Univ. Seoul, Korea. SchMOOze University MOO was employed because this MOO server allows enCore Xpress interface. SchMOOze University was established in July, 1994 as a place where people studying English as a second or foreign language could practice English while sharing ideas and experiences with other learners of English. It is located at: <http://schmooze.hunter.cuny.edu:8888/>

As this URL shows, SchMOOze University is located in a host computer in Hunter College of City University of New York. Even though it is a virtual university, SchMOOze University, like an ordinary university, has many buildings such as a library, an administrative building, the Student Union, and classrooms. There is a dorm for students where the user has his own room. Any user who has basic proficiency in English such as using greetings or introducing oneself can participate in MOO activities. However, higher levels of discussions or conversations with native speakers require an advanced level of English.

A variety of users come to SchMOOze University. They vary from non-native students studying in English-speaking countries like United States and England, to students from other countries such as Japan, Korea, Singapore, and Hong Kong. Since so many different students gather on SchMOOze MOO, the users greet others, introduce themselves, and talk about interests just as they do in the real world. There are many classrooms for group activities on various topics. Students also have opportunities for enjoying interesting language games in the Game Room. They can find documents about SchMOOze University and literary works done by SchMOOze users in the library. They also can decorate their own dorm rooms so that other users can see the descriptions and messages when they come in and go out of the rooms.

The Adoption of MOO to an Actual Class

Following Healey's (1997) suggestion, I used the SchMOOze University MOO in the following ways.

As pre-computer activities:

1. I asked students to imagine a university campus map.
2. I asked students to look at a printed version of the SchMOOze map.
3. I had students describe how to get from the Entrance Gate to the Classrooms, and the Student Union.

As activities on the computer:

1. I asked students to hold a whole-class discussion.
 - a. Give each student or group of students a specific question to discuss.
 - b. Assign a sentence to paraphrase, with each person's paraphrases shared with the whole group.
 - c. Start a discussion of a class reading, using questions related to details.
2. I had students get some specific information from people online. I had students start a polite conversation, then ask people their opinion on a current news topic. They can compare the opinions of people from different countries, perhaps of different ages, and write a report.
3. I had students to explore SchMOOze and discover resources there.
 - a. Ask students to find answers to some of the following questions:
 - How do you get to the classroom, and what can you learn there?
 - What games can you play in the Student Union?
 - Where is the Grammar Maze and how do you get out of it?
 - What books are in the library?
 - What is growing in the garden?
 - Are there any animals at SchMOOze?
 - How do you become a regular character rather than a guest?
 - What might be useful for you to do at SchMOOze?

As Post-computer Activities:

1. I asked students to do any of a number of things based on their SchMOOze experience. Here are a few ideas:
 - a. Write a summary of a group discussion
 - b. Write a Tourist Guide to SchMOOze.
 - c. Share the results of the explorations.

Outcomes from the Class

At the end of the semester, I conducted a small survey to find out how students felt about the use of MOO in English classes. Results from the survey indicate that MOO is a very effective form of on-line interaction. Based on students' responses I summarized the good points of using MOO in language learning.

First, MOO activities provide a highly encouraging environment for autonomous and collaborative learning. Once the students have mastered the basic commands and concepts, they are in control of their learning experiences on the MOO. MOO activities are also very conducive to cooperative learning among learners. Joint ownership and shared written spaces provide a stimulating situation for the interaction among users. Secondly, MOO activities are very fun and playful. Learners tend to use humorous and entertaining language. This is primarily due to the highly interactive nature of MOO where a person's attractiveness can be exhibited only through words. Thirdly, the authenticity of language and contexts provided by MOO environment as well as autonomous, collaborative and entertaining nature of MOO activities increase students' intrinsic motivation, and thus enhance the efficiency of learning language and culture.

On the other hand, results also show that learning English through MOO activities poses some problems. First, the MOO can appear confusing and overwhelming at first, especially to students whose English or typing skill is not good enough to interact on the MOO. Secondly, since MOO activities still require technical skills, it takes a relatively long time for students to find their ways on the MOO. Thirdly, Students may encounter undesirable users who disrupt the attention and intimacy that is achieved on MOOs.

Conclusion

In conclusion, as Danford (1999) mentions, the web-based MOO presents opportunities to communicate effectively, to promote collaborations, and to construct MOO objects which convey information to future learners. The marriage of MOO and Web provides the best of both - the interactivity of the MOO and the multimedia dimensions of the Web. For today's active language learners the web-based MOO can be used to enhance educational opportunities and to promote all the good stuff such as interactive learning, learner-centered learning, self-directed learning, autonomous learning, critical thinking, problem solving, communication, collaborations, and constructions which are essential for successful language learning.

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Learning Strategies for Technical Terms without Context

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Abstract

Vocabulary learning strategies concerning dental terms were provided without context to students, in which a teacher simply allows students to use a word list. Subsequently, the learning strategies that students actually employed were examined over a period of two years. In the first year's investigation, a remarkable increase in use of strategy was mentioned specifically in cognitive, affective, and social strategies. In the second year's study, significantly increased items were recognized in memory, cognitive, affective, and social strategies. The main reason for these strategy uses seems that learners have not used these strategies before or they have not noticed their own use of them. Usual teaching methods and styles, and the learning environment around students also seem to affect students' strategy choice.

Introduction

Background to this Study

Previous to this study, the first year's participants were asked what vocabulary learning strategies they had employed. The main reason why we attempted to discover our students' experiences of strategy use was as a prelude to strategy training for our students. It was a less-structured self-report survey. Results of the preliminary survey show that students' strategy use was very limited to fewer than we had expected. We see from Table 1 that most students used rote memorization ($f\hat{O}^2(2) = 140.237, p < .01$). These results support Oxford and Scarcella (1994)'s view of Asian learners' preference in the method of vocabulary learning. They write, "Rote memorization is popular in some cultures from which L2 students come, particularly Asian culture." We suppose that teaching a large variety of learning methods to our students contributes to facilitating effective learning of vocabulary words.

Table 1. Preliminary Survey on Vocabulary Learning Strategies

Rote memorization (memorizing by writing words repeatedly)	74 (97.4%)
Word list (made by students themselves)	1 (1.3%)
Dictionary use	1 (1.3%)

In this study, we are using vocabulary words to refer to technical dental terms. These terms were taught by use of a word list without using context. Although it is optimal that vocabulary can be acquired through reading, intentional and direct teaching of vocabulary has proved to be effective among good EFL learners in poor educational materials situations (Gu & Johnson, 1996, p. 646). We have not yet found a text including dental terms appropriate for students of junior college dental hygiene courses.

Purpose of this Study

The purpose of this research was (1) to provide students with vocabulary learning strategies training in the decontextualized situation which means that we don't use discourse context, but rather word lists and (2) to examine to what extent learners actually utilize vocabulary learning strategies.

Method

Participants

Seventy-eight of the first year and 66 of the second year freshmen attending a junior college dental hygiene class participated in this study. They were all females. They took an English class as a required subject during their two-year associate degree program. In this class, a knowledge of English dental terminology was provided and English conversations which might take place at a dental clinic were practiced.

Teaching Materials

Teaching materials are composed of two types. One type has a dental terminology list and the other includes training material for learning strategies concerning vocabulary. Both types of materials, a terminology list and an activity sheet for training, are original and will be revised for better use by the students. Eighteen or nineteen terms, which would culminate in a total of 255 terms to be appropriate for a dental hygienist in fifteen lessons for six months, were presented in each lesson over fifteen lessons using a dental terminology list. At the beginning of a lesson a multiple-choice type quiz was given in order to confirm the students' comprehension of terms they learned during a previous lesson.

Vocabulary learning strategies which could be used in this study were determined based on Oxford (1990)'s classification of learning strategies. These were applied to decontextualized vocabulary learning. In other words, these strategy items are sort of a modified version of SILL (Strategy Inventory for Language Learning). Those items are composed of six categories: memory, cognitive, compensation, metacognitive, affective, and social strategies. The teaching material for strategy training also entailed two types of materials: knowledge type and activity type. With regard to an activity type, a study sheet for activity was prepared by a teacher and performed by a student. For the strategy which was not so easy to organize as an activity, knowledge type materials were prepared to give an explanation of each strategy.

Procedures

In both years, 1998 and 1999, 255 dental terms which could be needed when students are employed as dental hygienists were presented over fifteen lessons for six months. The technical terms were taught for the first three lessons without strategy training. During the fourth lesson the questionnaire was completed as a pre-measure for getting the information of students' strategy use which has frequently appeared before the strategy training. From the fifth lesson through to the fourteenth lesson the vocabulary learning strategies were guided with the dental terms' instruction. During the fifteenth lesson the questionnaire was carried out again as a post-evaluative measure to estimate students' actual strategy use during the strategy training.

At the beginning of each lesson, a quiz of terms learned during a previous lesson was given. The dental term's pronunciation, its Japanese meaning, its definition, and its origin were taught according to a term list for the terminology instruction. On the other hand, for the strategy training, two types of strategy instruction, knowledge type and activity type, were provided by means of each strategy item's character. It was too demanding to prepare a strategy activity for every strategy item so that students could accomplish a task by themselves.

Assessing Strategy Use

Ramirez (1986:138) reports the usefulness of using a self-report inventory as a means of assessing learning strategies. We made an evaluation form appropriate for vocabulary learning in a decontextualized situation based on SILL (the strategy inventory for language learning) version 7.0. This modified version of SILL was an evaluation instrument used both before and after the strategy instruction. The SILL is composed of 50 learning strategy items. But our modified strategy inventory is a 28-item list of first year terms and a 38-item list of the second year terms, Likert-scaled, self-report instrument. The second year's questionnaire items were revised and increased from 28 to 38 items, adapting extra items which could be applicable to vocabulary learning.

Data Analysis

The two years' information gained from pre- and post- questionnaires of our strategy inventory was analyzed by both the Wilcoxon Match-pairs signed-ranks test and ANOVA. The Wilcoxon Match-pairs signed-ranks test was applied for interpreting the ordinal scale information drawn from the questionnaire. ANOVA was employed to examine the effect of the vocabulary learning strategy instruction. For putting ANOVA into operation, students were divided into the two groups: the upper and the lower group by the means of the results of quizzes given three times before strategy instruction. The Likert-scaled numerical values obtained from the questionnaire were transferred to scores which were analyzed by a two-way (ability and test) ANOVA.

Results and Discussion

Results and Discussion of the First Year's Wilcoxon Match-Pairs Signed-Ranks Test

By observing the results obtained from the Wilcoxon Match-pairs signed-ranks test (see Table 2), we can find that only one strategy item, which is "Cognitive, practicing naturalistically," was significantly used many times during both years. This cognitive strategy expresses the notion that "I say the word I have already learned when I see the real thing, say, at a dental office". Looking at the results of ANOVA, it is also proved that the use of this strategy was increased. We would speculate the reason of this strategy use from the fact that students often have a chance to see real objects at a dental-related class or a practical exercise. In these learning circumstances using this strategy should be familiarized and be very natural for students and comprehension of a term would grow with association with the real thing.

The seven items were significantly and frequently used only in the first year's research. They are "Metacognitive, organizing", "Metacognitive, self-monitoring", "Affective, using progressive relaxation", "Affective, taking risks wisely", "Affective, writing a language learning diary", "Affective, discussing your feelings", and "Social, cooperating with proficient users". These seven items had also significance with ANOVA.

Now we will take a brief look at each one of them in detail. To begin with the "organizing" strategy could be stated in the strategy inventory such that "I plan my schedule so I will have enough time to study English". It is considered that a number of students had not routinized learning English before the strategy instruction and then increased the strategy use. Secondly, the "self-monitoring" strategy denotes that "I will know which term I often use incorrectly and I will deliberately try not to make a mistake". Due to a giving a quiz every lesson, students seemed to pay close attention to any term which tends to be easily mistaken.

Thirdly, three strategies of "using progressive relaxation", "writing a language learning diary", and "discussing your feelings" fall into affective strategy category. The "using progressive relaxation" strategy signifies that "I try to relax whenever I study English". The "writing a language learning diary" strategy means that "I write down my feelings in a memorandum". The "discussing your feelings" strategy indicates that "I talk to someone else about how I feel when I am learning English". Since the use of these three strategies was increased and English was a tough subject for many students, some of the students seem to have felt strain or stress studying English.

Especially, the students from the lower group more often than the upper group used the “discussing your feelings” option (ANOVA). Fourthly, the “taking risks wisely” strategy expresses that “I venture to say something using the terms already learned”. We can recognize students’ efforts to use the terms they learned as in the strategy “practicing naturalistically”. Lastly, the “cooperating with proficient users” strategy denotes that “I ask for advice as to how to remember words from other students who can remember many words”. It follows from what has been said that students’ positive attitude for technical term learning can be admitted.

Table 2. Results of Wilcoxon Match-Pairs Signed-Ranks Test

Strategy Item	p Value (Significance Level)	
	1st Year	2nd Year
Memory strategies, Grouping	.3967(ns)	.0231(*)
Memory, Associating, Elaborating	.9621(ns)	.0334(*)
Memory, Placing new words into a context	.0542(ns)	.0633(ns)
Memory, Using imagery	.8493(ns)	.0823(ns)
Memory, Semantic mapping	.4885(ns)	.0178(*)
Memory, Using keywords	.5695(ns)	.3348(ns)
Memory, Representing sounds	.3307(ns)	.9397(ns)
Memory, Structured reviewing	.6959(ns)	.3324(ns)
Memory, Using mechanical techniques	.1074(ns)	.7963(ns)
Cognitive, Repeating	.3981(ns)	.7047(ns)
Cognitive, Formally practicing with sounds	.2068(ns)	.3091(ns)
Cognitive, Practicing naturalistically	.0001(**)	.0102(*)
Cognitive, Using resources	—	.9107(ns)
Cognitive, Analyzing expressions	.3114(ns)	.5030(ns)
Cognitive, Analyzing contrastively	.5450(ns)	.6213(ns)
Cognitive, Translating	.2236(ns)	.5264(ns)
Compensation strategy	.7700(ns)	.1720(ns)
Metacognitive, Overviewing and linking	—	.2793(ns)
Metacognitive, Paying attention	.5877(ns)	.3087(ns)
Metacognitive, Organizing	.0315(*)	.5752(ns)
Metacognitive, Setting goals and objectives	.2339(ns)	.0978(ns)
Metacognitive, Seeking practice opportunities	—	.2872(ns)
Metacognitive, Self-monitoring	.0170(*)	.4751(ns)
Metacognitive, Self-evaluating	—	.7267(ns)
Affective, Using progressive relaxation	.0116(*)	.0878(ns)
Affective, Using music	—	.0589(ns)
Affective, Using laughter	—	.1486(ns)
Affective, Making positive statements	—	.6608(ns)
Affective, Taking risks wisely	.0423(*)	.2004(ns)
Affective, Rewarding yourself	.7526(ns)	.0524(ns)

Table 2. Results of Wilcoxon Match-pairs signed-ranks test (Cont'd)

Strategy Item	p Value (Significance Level)	
	1st Year	2nd Year
Affective, Listening to your body	.9661(ns)	.8516(ns)
Affective, Writing a language learning diary	.0070(**)	.1858(ns)
Affective, Discussing your feelings	.0091(**)	.2442(ns)
Social, Asking for clarification	—	.1090(ns)
Social, Asking for correction	—	.3734(ns)
Social, Cooperating with peers	.3220(ns)	.4938(ns)
Social, Cooperating with proficient users	.0047(**)	.9050(ns)
Social, Developing cultural understanding	—	.0931(ns)

*p < .05 **p < .01

Results and Discussion of the First Year's ANOVA

In addition to those seven strategy items that proved to be used significantly from the Wilcoxon match-pairs signed-ranks test as has been mentioned in 3.1, three more items were significantly and often used in the first year's research by ANOVA (see Table 3). They are "Memory, placing new words into a context", "Memory, representing sounds in memory", and "Memory, using mechanical techniques". On one hand the students from the upper group increased the use of "placing new words into a context" strategy. On the other hand, the students from the lower group increased the use of both "representing sounds in memory" and "using mechanical techniques" strategy. It follows from this that the students from the upper group managed to put a new term in a sentence (Japanese or English) made by themselves and to remember it. However, the students from the lower group paid close attention to the sound included in the term and remembered a term with the learned one which had a similar sound to it, and they made use of a word card to remember when they encountered a new word.

Table 3. Items Proven to be Significantly Different (1st Year Results)

	Higher	Lower	Test
Memory, Placing new words into a context	**		+(post)
Memory, Representing sounds in memory		*	
Memory, Using mechanical techniques		*	
Cognitive, Practicing naturalistically			**
Metacognitive, Organizing			*
Metacognitive, Self-monitoring			*
Affective, Using progressive relaxation			*
Affective, Taking risks wisely			+
Affective, Writing a language learning diary			**
Affective, Discussing your feelings		**	*(post)
Social, Cooperating with proficient users			**

+p < .10 *p < .05 **p < .01

Results and Discussion of the Second Year's Wilcoxon Match-Pairs Signed-Ranks Test

From the results of the Wilcoxon Match-pairs signed-ranks test, three strategy items proved to be significantly used often only in the second year's research (see Table 2). They all fall into memory strategy, "Memory, grouping", "Memory, associating", and "Memory, semantic mapping". The "grouping" strategy signifies that "I classify new words into groups according to the topic (instruments, dentition, anesthesia), the similarity (full denture, partial denture), and the contrast (mesial proximal surface, distal proximal surface)". The "associating" strategy implies that "I think of the relationships or the association between the words I already know and a new word". The "Semantic mapping" strategy shows that "I remember terms creating a semantic map, a diagram in which the key concepts (stated in words) are linked with related words via arrows or lines". Setting up more activities for these strategies instruction in the second year's study than in the first year's may affect students' choice of those three strategies among many items. It was also relative easy for a teacher to make a diagram linking key concepts with related terms in meaning. It is also recognized that the use of those three items increased significantly from the data of ANOVA, too.

Results and Discussion of the Second Year's ANOVA

It is proved that the strategy item "Memory, representing sounds in memory" was significantly and often used in both the first year's and the second year's research from the results of ANOVA (see Table 4). Irrespective of the students' ability to understand terms, learners paid attention to the sound and linked a new term to the learned term with similar sound so as to remember it.

Two items of "Metacognitive, self-monitoring" and "Affective, using progressive relaxation" were also significantly and frequently used in both the first year's and the second year's research. Particularly, the students from the upper group used the strategy remarkably often in "self-monitoring". It is considered that they were very conscious of a quiz and paid more attention to a term which tends to be mistaken than the students from the lower group.

The other six items were significantly and often used in the second year's research. They are "Cognitive, repeating", "Cognitive, formally practicing with sounds", "Metacognitive, self-evaluation", "Affective, using music", "Affective, rewarding yourself", and "Social, asking for clarification". The students from the lower group frequently used the strategy with both the "repeating" and the "formally practicing with sounds" strategies. To put it the other way round, it is said that they wrote and pronounced a new term aloud several times to remember it. The students from the upper group used the strategy of "self-evaluating" many times. They paid close attention to a term which tended to be mistaken and confirmed their understanding of a term by the quiz they made after practicing terms. The upper group students' attempts lead to the fact that the means of the upper group (36.5 marks) were higher than those of the lower group (31.1 marks) at the retention test (50.0 full marks) as an end-of-term examination carried out two weeks after technical terms and strategy instruction were accomplished.

From the results of ANOVA analysis, we could see the significant tendency in using three strategies of "using music", "rewarding yourself", and "asking for clarification". This fact suggests that students became aware of an affective factor, for example, they were relaxed listening to music and praised themselves for their success in learning terms. They also worked with other students cooperatively asking for the meaning of a term.

Table 4. Items Proved to be Significantly Different (2nd Year Results)

	Higher	Lower	Test
Memory, Grouping			*
Memory, Associating, Elaborating			*
Memory, Semantic mapping			**
Memory, Representing sounds in memory			+(pre)
Cognitive, Repeating		*	*(pre)
Cognitive, Formally practicing with sounds		**	** (pre)
Cognitive, Practicing naturalistically		**	+(pre)
Metacognitive, Self-monitoring	*		*(pre)
Metacognitive, Self-evaluating	*		** (pre)
Affective, Using progressive relaxation			+
Affective, Using music			+
Affective, Rewarding yourself			+
Social, Asking for clarification			+

+p < .10 *p < .05 **p < .1

Conclusion

In this study, dental technical terms were taught using a word list without context for freshmen in a dental hygiene class at a junior college. Learning strategy instruction focused on vocabulary was provided at the same time. In order to evaluate students' use of strategies, the same questionnaire was answered before and after the strategy instruction. The strategy inventory we employed was constructed from modifying Oxford's (1990) SILL version 7.0 for vocabulary learning. The information obtained from the questionnaire was analyzed by both the Wilcoxon Match-pairs signed-ranks test and ANOVA.

As we have seen in the preceding chapter we can acknowledge some strategy items' protrusive utilization. It may be desirable to mention again briefly the reason for these strategy use. The reason for using these four strategies use of "representing sounds in memory", "practicing naturalistically", "self-monitoring", and "using progressive relaxation" seems to be that usual teaching methods and styles, and students' needs or learning environment as well as strategy instruction influenced students' strategy use. As for three strategies of "representing sounds in memory", "self-monitoring", and "using progressive relaxation," we could point out that the dental terms' teaching methods we usually adopted led to using these strategies in a roundabout way. In dental terminology some words cannot be found in the English-Japanese dictionaries, which students habitually refer to. Moreover, some students are observed to be bewildered by encountering those terms for the first time. For assisting students in pronouncing these unfamiliar words, pronunciation description using Katakana is put into service. In utilizing the strategy of "representing sounds in memory" students may have paid attention to the sound within a term since we focused students' awareness on the pronunciation presenting Katakana-transcription on transparencies for an overhead projector. With respect to the "self-monitoring" strategy we gave students a quiz every lesson to have them study and to confirm their comprehension of those terms they learned. Actually, before a quiz most of the students were seen to study terms. Moreover, they tried to check for mistakes by themselves to make sure that they grasped the form and the meaning of a term correctly. On the subject of the strategy "using progressive

relaxation” we recognized the fact that English was a tough subject for most of the students and they seemed to have excessive stress when studying English. Their learning attitude changed to be positive gradually by stimulating their interests in a certain dental area and encouraging their participation in a learning activity. With reference to the strategy “practicing naturalistically”, we could specify the rich learning situation around the students. The college has a dental clinic attached to it. Students often had the opportunity to see real objects such as instruments at a dental clinic during a practical exercise as a dental hygienist.

Cohen (1998, p. 95) enumerates some examples of criteria which can be used to evaluate the strategy training. These criteria such as improved student performance, general learning skill improvement, and maintenance of the new strategies are certainly perceived as influential tools for the program evaluation. One of the most vital factors in learning strategy training in foreign languages is the need for strategy training to be informed, integrated, and to involve a high level of self-control (Graham, 1997, p. 83-84). It would be beneficial if students were more conscious of the objective and usefulness of strategy training. In addition to students’ efforts, a teacher will need to revise the content of strategy instruction for students’ benefit of effective use of strategy and for fully completing the instructional cycle.

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A Lexical Analysis of Oral Communication A / B Textbooks for Japanese EFL Learners

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Abstract

The objective of our research is to examine the lexical authenticity of Oral Communication A/B textbooks for Japanese EFL learners. A dozen Oral Communication textbooks were chosen and were given computational lexical analysis to observe if they use particular lexical items which are commonly used in spoken English. Such items include adverbials, discourse markers, and response forms. The results of the analysis have shown that most of the OC textbooks did not use these items sufficiently and only a few introduced a wide variety of these items. It is concluded that more items should be introduced so that the textbooks can help students increase their spoken vocabulary size and consequently improve their communicative skills in spoken English.

Introduction

English teaching in Japan has often been criticized for its neglect of teaching communicative skills. In 1994 the Japanese Ministry of Education, Science, Sports and Culture introduced Oral Communication (OC) A/B/C into the Course of Study as a solution to this problem. Since then, OC has been taught in Japanese high schools with the textbooks authorized by the Ministry. The general goals of OC are: (1) to develop communicative skills of students, such as understanding a speaker's intentions, and expressing their own ideas in spoken English; and (2) to cultivate positive attitudes among students toward communication in English. Since OC is virtually the only subject offered to learn spoken English communication for most of the Japanese high school students, the importance of this subject should be recognized enough.

The Course of Study issued by the Ministry states that the objectives of Oral Communication A (OCA) are to develop students' abilities to understand a speaker's intentions and to express their own ideas in spoken English. Activities in speaking and listening exercises in OCA should be based on everyday situations. Therefore, the OCA textbooks are required to include expressions essential to conveyance of feelings or opinions around a variety of topics. The main goal of Oral Communication B (OCB) is to develop listening skills of students, such as understanding a speaker's intentions or ideas in spoken English. In addition, expressions that are useful in asking for confirmation should be taught as well. Topics used in OCB textbooks should be expressed in dialogues, speeches, recitations, etc. As for Oral Communication C (OCC), its objectives are to develop students' abilities to organize, present, and discuss their own ideas. The textbooks should use expressions that are useful in conveying suggestion, assertion, argumentation, etc. Recitation, speech, discussion and debate should be used to express topics. Since the number of OCC textbooks published so far is very limited and OCC is rarely adopted as an OC subject rather than OCA and OCB, OCC textbooks are not examined in this study.

The Data and its Overview

For our research, we selected most popular 13 OC textbooks (6 OCA textbooks and 7 OCB textbooks), and they were subjected to computational lexical analysis. First, an OC-textbook corpus was constructed from the electronic data of the OC textbooks supplementarily distributed by the textbook publishers on floppy discs. This corpus contains all the passages, dialogues, and exercises in the textbooks. Then the corpus was statistically processed by our concordance software including *WordSmith* and *MonoConc*. The data from the 13 textbooks amounted to 122,281 words in token and to 5,560 words in type. The data size of each textbook is shown in Table 1. Table 1 shows that the size of each textbook varies widely: OCA1 uses 1,394 words in token in the textbooks, while OCA4 uses only 702 words. The OC textbooks show a great difference in the number of words used, even though all of them have passed through the same textbook authorization system given by the Ministry. Considering that the Ministry's instruction for the Course of Study allows an OC textbook to use up to 2,000 words in type, OC textbooks could and should introduce a greater number of words to enrich their contents.

Table 1. Number of Words Used in OC Textbooks

Textbook	Type	Token	Textbook	Type	Token
OCA1	1,394	7,200	OCB1	1,194	4,403
OCA2	945	7,250	OCB2	1,346	7,289
OCA3	917	15,916	OCB3	1,254	8,093
OCA4	702	2,796	OCB4	918	3,639
OCA5	1,206	10,755	OCB5	1,549	14,268
OCA6	779	11,715	OCB6	2,475	18,667
			ODB7	1,754	10,290
OCA Average	991	9,272	OCB Average	1,499	9,521

Analysis

Carter & McCarthy (1997) show that in spoken English certain adverbs play an important part and are used frequently by speakers to indicate personal attitudes and judgments. According to *Longman Grammar of Spoken and Written English (LGSWE)*, adverbials can be divided into three major classes by their functions: circumstance adverbials, stance adverbials, and linking adverbials. Circumstance adverbials are used to add information about the action or state described in the clause. Stance adverbials are used to express mental state, judgment, or attitude of the speaker. *LGSWE* statistically shows that these two classes of adverbials tend to be used more frequently in conversation than in other registers. The third group, linking adverbials are used to state the speaker's or hearer's perception of the relationship between two units of discourse, and they are also common in conversation. Since these adverbials play important roles in spoken English communication, we have examined how they were used in the OC textbooks. Approximately 50 adverbials were selected from *LGSWE*, and their appearances in each textbook were counted using concordance software. The results are shown in Table 2. We will discuss the results in the next section.

Some other lexical items fulfil various communicative functions in spoken discourse, i.e. discourse markers, response forms, response elicitors, and fillers. Discourse markers generally serve to signal various functions such as shared knowledge, proclaimed knowledge, topic shift, pre-closings, boundary marking, and many other interactive and structural functions. Response elicitors have the role of inviting agreement or confirmation from the

hearer. They can also be classified as backchannels because they also signal feedback to the speaker that the message is being understood and accepted. The function of fillers is to enable the speaker to pause in the middle of a message, signaling the wish to continue speaking. Since these items are indispensable to natural conversational English, it is desirable that OC textbooks introduce these items. From *LGSWE*, we selected major items which belong to each category, made their lexical analysis, and observed how many of them were actually used in the OC textbooks. The results are shown in Table 3.

Discussion

Table 2 and Table 3 indicate how many adverbials and discourse items are used in each textbook. The number of occurrences is significantly different from one textbook to another. For example, while OCB6 and OCB7 introduce many kinds of adverbials and discourse items, OCA6 introduces only four kinds of adverbials and four kinds of discourse items. It is inferred from the data that the authors of OCB6 and OCB7 carefully selected vocabulary for teaching authentic spoken English. They must have considered that these adverbials and discourse items are essential to natural conversation. Most of the other OC textbooks, however, introduced much fewer adverbials and discourse items. Considering the importance of these items, students who are taught Oral Communication with this kind of textbook could suffer a disadvantage when trying to communicate in spoken English.

Let us discuss in more detail the results of the analysis. Among circumstance adverbials, amplifiers were given special attention to observe if the OC textbooks properly reflect the frequent use of these adverbials in actual conversation. Our analysis has found that common amplifiers like *extremely*, *completely*, and *terribly* are underrepresented in the textbooks even though they are among the top 2,000 words of the Spoken Vocabulary of *Longman Dictionary of Contemporary English (LDOCE)*.

Among the subcategories of stance adverbials, the best represented are epistemic stance adverbials expressing doubt and certainty, like *maybe*, *of course*, *certainly*, and those expressing actuality such as *really*. Other epistemic adverbials, however, are not sufficiently used in the textbooks, although many of them are listed among the top 1,000 words of the Spoken Vocabulary of *LDOCE*, i.e. *probably*, *definitely*, *surely*, *possibly*, *likely*, and *actually*. Further, other subcategories of stance adverbials are not properly represented in the textbooks. According to *LGSWE*, stance and linking adverbials are two to three times more frequent in conversation than in other registers, such as fiction and news. These adverbials which contribute a lot to adding one's attitudes or viewpoints to a proposition should be introduced appropriately in OC textbooks.

The examination of the use of discourse markers, response elicitors, response forms, and fillers revealed that the OC textbooks are defective in these lexico-discoursal aspects. While the most basic discourse markers (*well*, *now*, *so*, and *then*) were properly treated, multi-word markers (*I mean*, *you know*, and *you see*) were not properly represented even though they are the most representative and the most frequent. Furthermore, markers such as *kind of* and *sort of*, which are used to soften the tone of utterances, were also poorly introduced in most of the textbooks. As for response elicitors, only the word *right* occurs in some of the textbooks and the other two items were rarely used. As for response forms, while some typical forms like *sure*, *all right*, and *OK* were frequently used in the textbooks, others were not used very frequently. As for fillers like *err* and *um*, more than half of the textbooks didn't use them at all although they are considered to be essential to keep the floor in the turn-takings without being interrupted. Our analysis of the use of discourse items unveiled that most OC textbooks tend to use only typical items, and they are lacking in variety in the use of such items.

Conclusion

The results of our analysis show that the OC textbooks have the following problems concerning lexical items:

1. Too few words are used in OC textbooks although the Course of Study issued by the Ministry of Education permits the introduction of up to 2,000 different words in the textbook. More spoken vocabulary should be used in order to enrich the contents of the textbook.
2. In spite of their importance in spoken English, adverbials and discourse items are not properly introduced in the textbooks. In other words, they are underrepresented. The discourse items investigated in our research are concerned more with interpersonal and textual functions than with a propositional one. They are indispensable to natural conversation in that they can establish rapport in conversation and smooth communication. The OC textbooks should use them more frequently so that students can learn how to use them effectively in actual conversation.
3. The number and the variety of adverbials and discourse items used in a textbook is greatly different among the OC textbooks. Although they are all published as OC textbooks, it is likely that there is a difference of authenticity and difficulty among them. Teachers who teach OC should be aware of this and carefully try to select the textbooks for their students.

According to the Ministry of Education, all the OC textbooks are scheduled to be revised in 2003 in accordance with the new Course of Study. We expect that the OC textbooks will be improved to solve these problems and will be optimized to introduce appropriate spoken vocabulary so that students can effectively learn how to communicate in spoken English.

Table 2. Distribution of Adverbials

Items/Textbooks	OCA1	OCA2	OCA3	OCA4	OCA5	OCA6	OCB1	OCB2	OCB3	OCB4	OCB5	OCB6	OCB7	Total
Adverbials														
CIRCUMSTANCE Adv														
amplifie						r								
extre						m			3					3
fully	1		2		1			3	2		7		10	26
highly		1												1
especially	1	1		1			2	1	2	5	3	7	1	24
awfully								2						2
terribly		1					1					1		3
pretty			4			1		5	2			2	2	16
completely							2							2
totally														0
Subtotal	2	3	6	1	1	1	5	11	9	5	10	10	13	77
Number of types	2	3	2	1	1	1	3	4	4	1	2	3	3	8
STANCE Adv														
Episte														
EP-doubt														
probably		3				1		2		1		7	1	15
maybe	1	4	13				2	1			4	11	2	38
perha					1							2		3
of course	4		5	2	1		1	2	2	1	4	6	2	30
certainly	1	7	22			1		2	3				2	38
definitely			15									1		16
surely							1					1		2
possibly									1					1
likely								1				1		2
undoubtedly														0
no doubt														0
EP-actuality														
really	17	7	32	4	17	6	10	8	2	3	31	30	18	185
actually	8	2					1	2	2			9	3	27
in fact	1	2		1	1						1	4	2	12
as a matter of fact	1						1		1					3
EP-source														
apparently										1		1		2
obviously														0
according to				1			1			1	3	1		7
EP-lim														
generally								2	2			2	1	7
in general								4	1					5
mostly							1			3			2	6
in most cases												1		1
mainly												1		1
normally	2							1				1		4
basically												1		1
EP-viewpoint														
personally													1	1
Attitude														
unfortunately												1		1
fortunately							1	2				4		7
surprisingly													2	2
hope f								u						y 0
no wonde	2				r		3							5
exactly	1	1						2				2	2	8
Style														
honestly														0
to be honest	1													1
frankly												1		1
seriously												1		1
in a word	3													3
in short														0
LINKING Adv														
finally				1	9		5	1		3	5	1	1	26
there							f					1		1
Subtotal	42	26	87	9	29	8	27	30	14	13	48	91	39	463
Number of types	12	7	5	5	5	3	11	13	8	7	6	24	13	34
Total	44	29	93	10	30	9	32	41	23	18	58	101	52	540
Total number of types	14	10	7	6	6	4	14	17	12	8	8	27	16	42

Table 3. Distribution of Discourse Items

Items/Textbooks	OCA1	OCA2	OCA3	OCA4	OCA5	OCA6	OCB1	OCB2	OCB3	OCB4	OCB5	OCB6	OCB7	Total
Discou					r									
well	17	13	75	15	10		4	8	8	7	12	57	16	242
now	3	4		1	4		4	4	1		16	12	13	62
so	3		6				3	3		2	7	4	1	29
then	1				7		1	1			5	2	4	21
I mean	3												5	8
you know	1								1		1	3	5	11
you see	1											1		1
kind of					1								1	2
sort of									1			2	3	6
anyway	1					2		4				1	1	9
Subtotal	30	17	81	16	22	2	12	20	10	10	41	82	49	391
Number of types	8	2	2	2	4	1	4	5	3	3	5	8	9	10
Response Elicitors														
-right?	1	2	11									1	1	16
-OK?													1	1
-huh?														0
Respo n														
Yeah.		2	12	3			1			2	3	5	31	59
Uh-huh.	2	1							1	1		1	1	7
Sure.	3	11	33	11	29	2	1	3	3	1	2	10	7	116
Absolutely.														0
All right.	6	5	12	2	2	1		2	4	1	1	5	4	45
OK.	1	6			5	8		1	1			8		30
Exactly.	1											1		2
That's right.	2	1	12	1				1	2	2	6	6	1	34
Fillers														
err...			11											11
um...								1		1	1	1	8	12
Subtotal	16	28	91	17	36	11	2	8	11	8	13	38	54	333
Number of types	7	7	6	4	3	3	2	5	5	6	5	9	8	11
Others														
I see.	5	8	7	7	3			3	3	3	15	28	3	85
The thing is														0
Let's say														0
Let me see	3		3	1	1			1		1	3	5	2	20
Let's se	2	2		1	e			1	3		4	4	5	22
Subtotal	10	10	10	9	4	0	0	5	6	4	22	37	10	127
Number of types	3	2	2	3	2	0	0	3	2	2	3	3	3	3
TOTAL	56	55	182	42	62	13	14	33	27	22	76	157	113	851
Total number of types	18	11	10	9	9	4	6	13	10	11	13	20	20	24

Appendix

Titles of 13 OC Textbooks Selected for the Study

Departure Oral Communication A (Taishukan)
English Street Oral Communication A (Daiichi Gakushu Sha)
Hello There! Oral Communication A (Tokyo Shoseki)
On Air Communication A (Kaitakusha)
Revised Edition Expressways Oral Communication A (Kairyudo)
Select Oral Communication A (Sanseido)
Departure Oral Communication B (Taishukan)
English Street Oral Communication B (Daiichi Gakushu Sha)
Evergreen Communication B (Daiichi Gakushu Sha)
Hello There! Oral Communication B (Tokyo Shoseki)
On Air Communication B (Kaitakusha)
Progressive Oral Communication B (Shogakusha)
Sailing Oral Communication B (Keirinkan)

Note: The order of textbook titles shown here does not correspond with the order in Table 2 and Table 3 (OCA1, OCA2, etc).

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Making and Using Teaching Materials on the Internet

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Abstract

In the Research Society of Teaching Materials on the Internet (President: Mitsuaki Hayase, Mie University), seven members work together for the creation of a database of English teaching materials. In this paper, two practical studies that have been done as research projects for the group are summarized and reported on separately. The first article, "The First Step of Using the Internet for English Language Teaching", focuses on one effective way to start using the Internet for English language education. It will be helpful for those who are interested in introducing the virtual world into their classes. The second article, "Rap'n'Read: To teach Japanese Junior High Students Correct Rhythm of English", shows how to teach the rhythm of spoken English by making use of Rap music. The writer is concerned with theory and practice of making and using his original English pronunciation materials.

Introduction

In the Research Society of Teaching Materials on the Internet (President: Mitsuaki Hayase, Mie University), seven members work together for the creation of a database of English teaching materials. Each member has their own research project related to English teaching and the Internet. In this paper, two practical studies that have been done as research projects for the group are summarized and reported on separately.

The first article, "The First Step of Using the Internet for English Language Teaching", focuses on one practical and effective way to start using the Internet for English language education. The writer of the article started using the Internet in college classrooms in 1999. Based on his experiences, the summarization discusses

effects and problems that occurred in the course of the study. It also includes the students' reactions to the program. It will be helpful for those who are interested in introducing the virtual world into their classes.

The second article, "Rap'n'Read: To teach Japanese Junior High Students Correct Rhythm of English", shows how to teach the rhythm of spoken English by making use of Rap music. It is based on the writer's extensive experience both in teaching English and playing and composing music. Some teaching materials and original music composed by the writer are included in our database, which is open for public use (<http://engserve.edu.mie-u.ac.jp/~eg6011>).

The First Step of Using the Internet for English Language Teaching

Introduction

The present study reports on how the writer began to introduce the Internet for English language teaching at the college level. It details one practical and realizable way of teaching English using the Internet. It also reveals the effects of the practice, and problems and difficulties that are faced in using resources on the Internet as English materials.

The findings of this study will be helpful for the many English teachers who would like to start using the Internet in the near future.

School and Classes

Suzuka National College of Technology has five engineering departments: Mechanical, Electrical, Electronic and Information, Chemical and Biochemical, and Material Science and Engineering. It provides a comprehensive five-year course of general and technical education for students aged 15 to 20.

English language teaching with the Internet was given to students aged 15 to 16 in three 1st grade classes of the English IA course at the college. The same teacher (the writer) taught all three classes and it was the first time for both the teacher and students to use the Internet for English language teaching.

Processes

The following steps were taken when we began to use the Internet for English lessons.

1. A questionnaire on students' Internet use and analysis of the results
2. Planning the lessons
3. Implementation of the plan
4. An analysis of the results of the post-questionnaire and students' assignment

Pre-Questionnaire

In November, 1999, our pre-questionnaire was given to the participating 1st grade students (128 students in all) in order to understand their history of Internet use. According to the results, about half of the students use the Internet by themselves, for the sole purpose of information retrieval and collection, and Japanese language e-mail exchanges with friends. We cannot say that they are using the Internet to its fullest potential in their everyday lives. We have to teach the students how to use the Internet for English language learning so that many more students can understand the advantages of the Internet and use it fully.

Planning and Teacher's Preparation

The teacher considered the results of the pre-questionnaire and the computer environment at the college. Unfortunately, teachers and students cannot use computers during their English class times, so it was decided that students should be given the opportunity to use the Internet as a tool for information retrieval and collection outside the English classrooms.

First of all, the teacher used the Internet to identify web-sites that might be useful in helping both teachers and students to understand more deeply the contents of the lessons presented in their textbook. The procedures followed are shown below:

1. Drawing out keywords from the text
2. Keyword retrieval and collection
3. Selecting useful web-sites for teachers and students

It is very difficult to find web-pages which are appropriate for the students, because many web-sites, even those written in Japanese, are too difficult and professional for the students. We found having the students look for and report on their own favorite web sites related to the subject at hand to be one of the best ways to find appropriate materials.

Finding web-pages that can be used as an English material for the students is also very time consuming for the teacher. However, the resources presented on our research group's web-page (<http://engserve.edu.mie-u.ac.jp/~eg6011>) can be accessed to speed up the process.

Practice for 1st Grade Dtudents

Purposes.

1. Helping the students deeply understand the content of the lesson in the textbook.
2. Giving the students direct exposure to authentic English materials.
3. Increasing the quantity of the English input
4. Helping the students to become familiar with computers

Material. Lesson 7, Facing Up to the World Population Crisis, from *One World English Course I* Revised Edition (Kyoiku Shuppan, 1999).

This lesson is about the world population crisis that has caused various kinds of environmental problems. To understand the content of the lesson on the world population crisis, students were required to read English information on the following web-site, EcoKids Clubhouse(<http://www.ecokids.earthday.ca/>), which was selected by the teacher.

The web-site "EcoKids Clubhouse Stories" displays a picture book regarding environmental problems. The story is written for children in Canada, so the English expressions are comparatively easy and there are many pictures to help students understand the text. It makes us think about the relationship between human-beings, animals (especially birds) and the environment. By reading it, students can also experience reading an interactive story in which they can enjoy different plot lines according to the way they answer the questions at the end of the each page.

How Students Completed the Task. Each student went to the information center after school and used the Internet. Students read an English picture book on environmental problems in the above web-site and summarized it in Japanese as their assignment. However, the center does not have a sufficient number of computers to accommodate all of the students at the same time. The teacher had to divide each class of about forty students into four

groups and set different deadlines for each group. Afterwards, the teacher gave them a questionnaire about their assignment. From the results of the questionnaire and the assignment, the effects of using the Internet as well as the student's cares and problems were analyzed.

Results and discussion. Table 1 shows the results of the post-questionnaire. About half of the students answered that they could understand the story. The number of the students who answered "it's interesting" was the largest. More than half answered "I want to use the Internet more from now on."

Table 1. Results of the Post-Questionnaires

(1)	Do you understand this story? (121 in all)		
	I understand very well. (3: 2%)		I do not understand very well. (22: 18%)
	I understand almost all of it. (57: 47%)		I do not understand at all. (6: 5%)
	I do not know. (33: 27%)		
(2)	Do you think this report with the Internet is interesting? (125 in all)		
	Very interesting. (4: 3%)		Not so interesting. (26: 21%)
	Interesting.		(48: 38%) Not interesting at all. (16: 13%)
	I do not know. (31: 25%)		
(3)	Do you want to use the Internet more from now on? (125 in all)		
	Yes. (69: 55%)	I do not know. (37: 30%)	No. (19:15%)

Effects of the Practice. We can confirm some major effects of the practice from students' impressions of the assignment as reported in the post-questionnaire. Some of them reported that they enjoyed studying a picture book written in authentic English by using the Internet. Through the story, some became more familiar with environmental problems and came to understand their importance. Some found a large and diverse quantity information on the Internet. Some friends collaborated and taught each other how to use the Internet or its search engines. The point is that students, by referencing a web site written in authentic English, became familiar with computers, interested in environmental problems and practiced their language skills, all the while enjoying themselves and helping each other.

Problems and Difficulties. The following problems and difficulties are found in using the Internet for English language teaching.

1. English language difficulties

Giving notes in advance will help students understand English texts on the web-pages more easily, as most sites have many difficulties in regards to vocabulary, length of sentences, sentence structures complexities and so on. Moreover, some students did not understand the plot of the picture book well. It must be noted that teachers should make students develop the different kinds of reading skills required for the reading assignment. (scanning, skimming etc)

2. Computer familiarity problems

Computer literacy levels vary according to the students. The teacher tried to be in the computer center to help students when they used the computer or with any other problems they had. This practice is recommended. It should be noted however that the students who participated in this study were quite willing to help each other. This willingness could also be utilized.

3. Computer (Internet) environmental problems

Available facilities limit the students' activities. Teachers have to limit themselves to assignments that can be achieved within a reasonable timeframe. An environment where students can use the Internet during the English lessons is needed.

Teacher's Roles. The following are the teacher's main considerations in the present study of using the Internet for English language teaching.

1. Selecting web-sites for students
2. Helping the students solve problems and difficulties that they face in using computers.
3. Promoting students' Internet use by making and giving them a variety of tasks. (introducing useful web-sites, letting students present their impression of the web-sites that they discovered, giving students the opportunity to introduce the web-sites they selected etc.)

Conclusion

1. How do teachers teach students the knowledge and skills needed for computer and Internet use? When and what do teachers teach? We need to develop teaching plans and curriculums integrating English language and computer use.
2. Information retrieval and collection is not of itself of sufficient value to justify the continued use of the Internet. It is necessary that students output their ideas and opinions through the web-page making. In the long run, students should manage their own web-page.
3. Computer environments are needed where teachers and students can use the Internet during their lessons. Individual learning with the computer outside the classroom should be supporting the whole class lesson.

The present study can be mentioned only summarily. For further details of it, see the writer's home-page (<http://www.suzuka-ct.ac.jp/genl/fl/mikami/index.html>).

Notes

1. Sections 1 and 2 were written by Akihiro Mikami and Section 3 was written by Shoji Nakagawa.
2. These two studies were undertaken as part of the Research Society of Teaching Materials on the Internet, Internet Eigo Kyoza Kenkyukai, (President: Mitsuaki Hayase, Mie University), which was recognized as one of the project team by the Chubu English Language Education Society.

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Appendix: A Representative Application

Rap'n'Read : To Teach Japanese Junior High Students Correct Rhythm of English

Introduction

Rap'n'Read, which is my own naming, is an English pronunciation material for pronunciation. I choose text (sometimes I write original text) for it, analyze the rhythm structure of it, and compose accompaniment music. I think that they have the same importance and related each other closely. I have been creating it for more than 15 years. In this article I am going to write about theory, practice and prospect of it.

Concept of Rap'n'Read

Generally speaking, so called pop music (here I would like to include rock, 'J-pops', rap music etc.) is based on western music. Rhythm structure of melody is the same as that of verse, or historically I should say that verse bears melody. So I can say that rhythm of pop music, as includes melody, rhythm section, and all accompaniment elements, is that of European language itself.

Pop music is very popular especially to young generation. It is no exaggeration to say that it is a part of their life. In spite of the fact that Japanese junior high school students listen pop music very much, their pronunciation, especially rhythm, is monotonous or flat, which is the very characteristics of Japanese language. I thought that pop music material for pronunciation was very effective. For pop music is very familiar with students and music is a very good example of rhythm of English.

Consequently the main concept of Rap'n'Read would be : oriented to Japanese English education, good combination of text and music, and music familiar to students.

Differences from Jazz Chants

Famous Jazz Chants have maybe the same concept as Rap'n'Read. But there are some differences. I will show them below.

1. Music is different. Jazz Chants uses jazz, which is not so popular among Japanese students. I think that music has a very important role in such materials.
2. Jazz Chants are not based on English education in Japan. English education in Japan is based on the national curriculum, which limits vocabulary and grammatical matters.
3. Jazz Chants is not basically for English learners in Japan. They have their own difficulties in pronunciation which is a little bit different from learners in other countries.

Analysis of Practice

About 15 years ago, I sometimes composed to English text and let my students repeat with music. The reaction was far better than I expected. In 1990 and 1991 I composed rhythm materials systematically, using the texts in the textbook. I used them for the first graders mainly at the beginning of the class for the second and the third semester. Both in October and at the end of school year I let the students write the questionnaire including free composition.

For the October investigation I let the students write the impression freely. It was just after finishing the first Rap'n'Read. I sorted students' composition as followings below:

Group A. Concerning with evaluation of Rap'n'Read (A1. Affirmative A2. Negative A3. First negative then affirmative A4. Having difficulties)

Group B. Concerning with test

Group C. Others

The results were the followings: A1 → 76 (students), A2 → 5, A3 → 8, A4 → 14, B → 37, C → 7

At the end of school year I let the students write the questionnaire as well as free composition. The items of questionnaire were the followings below:

A. Concerning with Rap'n'Read itself: A1 → music, A2 → text, A3 → others

B. Concerning with the effects: B1 → memorization, B2 → achievement, B3 → will to study

C. Concerning with test

On each item I put the affirmative content on the left, negative content on the right, giving six ranks between them. I gave 6 points to the left, 5 points to the second left 1 point to the right. I made 32 questions. The results were the followings below:

Table 1. Mean Values for Each Category

Category	Mean Value
A1	4.0
A2	4.7
A3	3.6
B1	5.3
B2	3.3
B3	3.5
C	3.7

(I analyzed compositions of 96 students out of 158 students in the school.)

According to the results, I can say that Rap'n'Read is the most effective for memorization.

Next I will show the analysis of free composition. I analyzed students' composition on the following items: A → memorization, B → test, C → will to study, D → music, E → achievement, F → others.

Table 2. Results of Free Composition Analysis

Category	Number of Descriptions
A	60
B	59
C	38
D	42
E	29
F	48

According to the results, the number of description concerning with memorization is the greatest. Though the detailed analysis can not be shown here, as a result, I can say that students takes Rap'n'Read affirmatively and that it is the most effective to memorization.

Making of Rap'n'Read

Rhythm Analysis of the Text. I don't have clear way of rhythm analysis. In other words it is sensuous and intuitive. I read the text again and again. Then rhythm of the text came to me, and I write it down on music paper. One thing I can say is that an English sentence has a tendency to have rhythm of 3/8 or 6/8 in many cases which makes syncopation or triplet rhythm.

Taking sentences from textbook, I will show the example of Rap'n'Read.

(one and a half bar introduction)

16 8. (4) /

Brian's mother: Hello.

16 8. (4) 16 8. 8 8 / 16 8. 8 8 8 8 4 /

Koji: Hello. This is Koji. May I speak to Brian, please?

16 16 8 8 8 8. 16 (4) / 16 8. 8 8 16 8. (4) /

Mother: Sorry, but he's out right now. Can I take a message?

8 8 (4) (4) (4) /

Brian: I'm home.

4 8 16 16 (8) 8 8 8 / 8 8 4 8 16 16 (4) /

Mother: Oh, here he is now. Brian, Koji is on the phone!

(from New Horizon English Course Book II Unit 3 A Phone Call)

Note: figures above show music note: 4 à quarter-note, 8 à eighth-note, 8. à dotted eighth-note, (4) → quarter-rest / → bar line

Of course, this is not the only solution. Instead of 'This is (16 8.)', 'This is (8 8)' is possible. But 'This is (16 8.)', which contains syncopation, is far better. It is both rhythmic and natural. The same thing can be said concerning with 'Can I', 'May I'. There are 'impressive' syncopations in 'right now', 'here he is now.', and 'on the phone'. students might have some difficulties in these parts, but they will be sure to enjoy that rhythm.

Composing Music. First I write down music for the text as most composers do. Next I use a sequencer (Logic Audio) on the computer and input music data. It takes a lot of time to do so. But recently very convenient software appeared, which is called 'ACID pro'. All you have to do is just drag music sampling data to the score screen. Using ACID pro, you could compose music for Rap'n'Read in a short time, though it will take you much time if you want to compose a complicated one.

Possibility of Co-operation on the web

It is very hard to compose Rap'n'Read by only one person. I think co-operation on the web is very good way to spread Rap'n'Read. On the web you can share and revise to make it better one. And you can co-operate making process and save time.

The followings are co-operation items that I am planning:

1. Text writing
2. Rhythm analysis
3. Sound making

And you can give ideas of revision on those items. So far my home page is for just introducing Rap'n'Read. In the near future I would like to make a home page for doing that.

Conclusion

For nearly 15 years I have been making Rap'n'Read (in fact its name changed) . During these 15 years I experienced three junior high schools and circumstances or level of the students different. Some English materials may be effective to the students of one junior high, but others are not to the students of another junior high. Only Rap'n'Read is always effective. The biggest problem has always been that mass production is difficult. To have enough stock, as I mentioned above, co-operation on the web is one of the solution. Another solution is to make 'non textbook oriented' Rap'n'Read . I am planning to make Rap'n'Read according to situation and function shown in Course of Study for Junior High Schools.

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Making More Effective Use of On-Line Reading Material

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Abstract

Material available over the Internet in English offers numerous possibilities for use in the language classroom. But at the same time it offers teachers a challenge in how to assess and manage this seemingly boundless resource for instructional purposes. The authors have developed an on-line tool which automatically checks the proportion of words in a text that come from the high frequency words of English, the AWL and words outside of these levels. This tool has been named the Frequency Level Checker and was developed with a grant from Tokyo International University. This paper discusses the rationale for the use of this type of tool, and offers one example of how it was used to look at the vocabulary level of different kinds reading material often used in language classrooms. An explanation is also provided of how to access this tool and the different features it provides the user.

Introduction

The Internet has made it possible to access a wide variety of English language material for use in the language classroom. Material runs from authentic resources (newspapers, interviews, news broadcasts) to material designed with a specific pedagogical goal in mind such as vocabulary building, grammar, or listening. However, this valuable resource also requires language teachers to be selective in order to use it effectively. There need to be guidelines for selecting and grading materials according to the level of difficulty for a given group of learners. The authors have focused attention on the possibility of grading reading material from the perspective of vocabulary frequency levels. For this purpose an on-line tool, the Frequency Level Checker, was developed to assess the overall difficulty of a text in terms of vocabulary level. The Frequency Level Checker (FLC) compares words in a text with high frequency words, words from the Academic Corpus, and the words outside of the groups .

This paper will first focus on an explanation of the words included in the vocabulary levels and how these would be helpful for determining the level of a given text. This is followed by an explanation of how to input text, how to send the data and how to read the results. The results page offers the teacher a variety of feedback on the text which can be used to 1) determine the approximate level of the material based on the proportion of words from the different word frequency levels, 2) identify potentially difficult or unknown words for a particular group of learners, and 3) identify key words in a text. It is also possible to use this tool to devise vocabulary study lists and test materials.

The results of a comparison of simplified texts and unsimplified texts was made to determine in what ways these texts differ in terms of vocabulary. The results are reported here with suggestions for how this might be used to grade reading material found on-line.

This tool and instructions for its use are available to the public free of charge at: <http://language.tiu.ac.jp/flc/tool.html>. At this stage the tool is mainly designed to help teachers grade and analyze texts on the basis of the vocabulary load and the possible burden of unknown words for a given group of students. Future versions of the tool are planned for student use as an aid for self-study.

Background

Language proficiency rests on a number of competencies, and knowledge of vocabulary has been identified as an important subskill in numerous works. Research on the relationship between vocabulary knowledge and reading competency of ESL/EFL learners has looked at the effect of vocabulary size on reading comprehension (Laufer and Sim, 1985; Nation, 1992).

Of particular interest here is the claim made by researchers that a learner's vocabulary size is a good predictor of reading comprehension in a foreign language (Laufer, 1992; Nation, 1997). These studies have focused on how much vocabulary must be known for a learner to read fluently and be able to apply reading strategies from the L1 without becoming overloaded with a large number of unknown words. These studies indicate that 95% of the words in a text must be known before the learner can be said to read fluently. Laufer takes this one step further and asks how many words would need to be known to the learner to read unsimplified texts. Her study indicates that about 3000 word families would give 95% coverage.

Let us look at a text from the perspective of how often certain words are likely to occur. There are roughly 2000 word families that constitute the high frequency words of English. Research in frequency of vocabulary reveals the coverage of an average text by words from the high frequency levels will differ according to the type of text (Nation, 1992; Coxhead, 2000). It has been estimated that these high frequency words cover up to 90% of fiction texts, up to 75% of non-fiction texts, and up to 76% of the Academic Corpus (Coxhead, 2000). These figures point to the importance of learning these words as a first step to reading comprehension and fluency.

Furthermore, instructors need to gauge their students vocabulary level in order to decide what material would be appropriate. If a learner has a good working knowledge of the high frequency words of English, then he or she will probably know about 80% of the words in the text. But this would not be enough to handle an unsimplified text as we saw above, since 95% of the words or about 3000 word families in a text need to be known to ensure fluency. Therefore we must be selective of the texts that we give learners if our goal is to develop fluency and comprehension through extensive reading.

In order to facilitate the selection of materials and gain insight into what words a text includes, the authors developed an on-line tool, the Frequency Level Checker (FLC), for automatically checking the high frequency words in a text, and other categories of frequency.

The Design of FLC

The Frequency Level Checker divides and counts the words in a text into four word frequency groups, here referred to as levels. The levels contain the following types of words:

Words and Families

Level 1 contains the most frequent 1,000 word families of English. Included in this list are articles, prepositions, and pronouns, and other function words that would appear in any type of text fairly frequently. Depending on the material being examined, words in this level will cover from 70 to 80% of a text.

Level 2 contains the second most frequent 1,000 word families. These words will cover from 5-10% of a text.

Level 3 contains 570 of the most frequent word families found in the Academic Corpus. It does not include words from Levels 1 and 2. The occurrence of words from this level will vary depending on whether the material is academic or not.

Outside Levels is a list created of all words outside Levels 1, 2, and 3. This list will also include proper nouns.

Words used in the levels are grouped into families. A family consists of the headword and the inflected forms and certain derived forms of the word (Bauer & Nation, 1983). For example, the word *accept* would have the following family:

accept (headword)
 accepts
 accepted
 accepting
 acceptable
 acceptability
 acceptance
 unacceptable

This procedure of grouping words is followed since we can assume that if a learner knows the meaning of the headword, he or she will not have any difficulty learning the meaning of its family members. For this reason these words do not need to be treated as new words. Words in the Outside Levels do not show family groupings and will appear as individual words.

Accessing the Frequency Level Checker

In order to process a text with the Frequency Level Checker, the following procedure is used. (Fig. 1) Using the copy and paste function of the computer, a text created on a word processing program can be copied and pasted into the text-box or typed in directly. Then by clicking on the Enter key the text is sent for processing, with the results page appearing shortly.

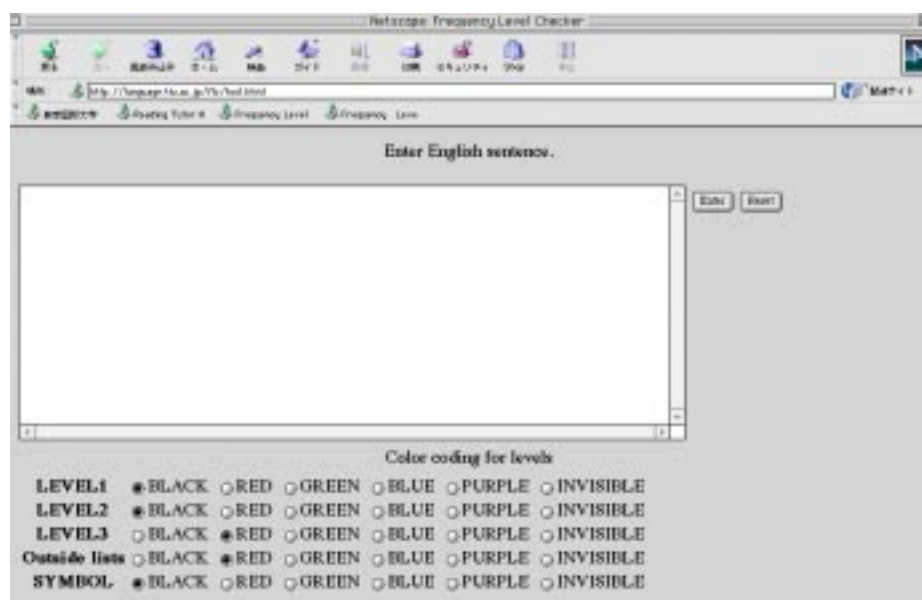


Figure 1. Input page of Frequency Level Checker

Another feature of the input page allows the user to choose a color for the different words in the text according to their frequency level. The default setting can also be used so that all words from Level 3 and words outside the levels will appear in red, Levels 1 and 2 in black. The default settings can be changed easily by clicking one of the colors for a given level. Choosing a color code for a particular level has the effect of highlighting those words and making it readily apparent how they are distributed in the text.

Results Page

After a text is sent for processing the results will appear on the screen with the following three features. (Fig. 2)

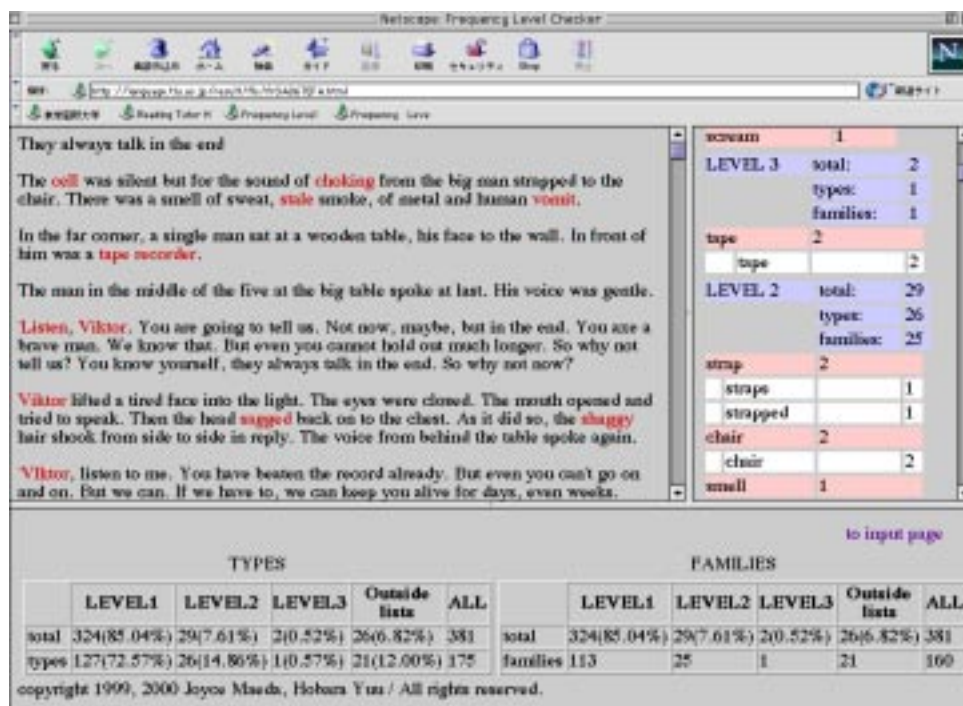


Figure 2. Results Page of Frequency Level Checker

The three features are (a) the original text with words color coded either using the default settings or those chosen by the user, (b) a word list of all words appearing in the text, and (c) two charts giving totals for various word counts.

An example of the original text as it appears in the results page can be seen in Fig. 2. Here the page appears in black and white. However, on the user's computer screen words in the text would be in the colors of the default settings or user choices. The list of all words in the text appears on the right hand side of the screen. Each word appears with its family headword and the number of times the word and possibly its other family members appeared. This grouping into family units can be very helpful for teaching the derivatives of words and their various inflections, particularly with learners who are still trying to master the high frequency words.

The words in the list to the right of the screen are listed in the order they appear in the text. Clicking on a word in the text will bring it to the top of the word list for easy reference. In a long text, this makes it easy to check the frequency of the word and the other inflected or derived forms the text contains.

The last feature to be discussed is the charts at the bottom of the screen on the results page. These give three different word counts for the text that was sent for processing.

1. The top tiers of both charts show the total number of all words (tokens) at each level and the total for the text. Percentages are in parenthesis.
2. The bottom tier of the chart on the left shows the number of types and percentage for each level and for the whole text. This is the number of different words (types) that appear in the text. In other words, a specific word form is counted only once and is not counted again if it is repeated.
3. The bottom tier of the chart on the right shows the number of word families in the text for Levels 1, 2, and 3, but NOT for words in the Outside Levels (words outside the three high frequency levels).

Practical Application of FLC

Comparison. A comparison was made of texts from simplified readers with controlled vocabulary and on-line newspapers (unsimplified texts) to ascertain what percentages of the vocabulary comes from the different word frequency levels analyzed by FLC. This information in turn could be used to determine the appropriateness of material for learners. Although limited in scope, this study attempts to answer the following two questions:

1. How do these types of texts differ in terms of vocabulary?
2. How appropriate would these different texts be for students who at the 2000 word family level?

Data. Three simplified readers were chosen, each from a different vocabulary level. Vocabulary at each level is controlled so as to avoid huge amounts of new vocabulary being introduced too quickly. The levels were the 1,000, 2,000 and 3,000 word levels of the Ladder Series published by Yohan Publication, Inc. Books at the 1,000 word level would contain words from the 1,000 word families used at this step. The newspapers selected were the on-line editions of the Seattle Times, the Chicago Tribune, and the Daily Yomiuri. The results are reported below.

Table 1. Percentage of Words (Tokens) from Different Word Frequency Levels

Materials	Level 1 (%)	Level 2 (%)	Level +2 (%)	Level 3 (%)	Outside (%)
1,000 Words	87.5	3.7	91.4	1.0	9.6
2,000 Words	85.9	5.7	91.6	0.3	8.1
3,000 Words	86.9	5.8	92.7	1.2	6.2
Seattle Times	77.9	5.1	83.0	3.3	13.7
Chicago Tribune	73.2	4.3	77.5	5.3	17.2
Daily Yomiuri	67.6	6.3	73.9	6.9	19.2

Table 2 Percentage of Words (Types) from Different Word Frequency Levels

Materials	Level 1 (%)	Level 2 (%)	Level +2 (%)	Level 3 (%)	Outside (%)
1,000 Words	82.1	8.1	90.2	2.2	7.5
2,000 Words	75.8	11.6	87.4	0.8	11.8
3,000 Words	76.2	13.0	89.2	2.0	8.8
Seattle Times	55.8	10.4	66.2	8.3	25.6
Chicago Tribune	52.7	8.5	61.2	11.0	27.8
Daily Yomiuri	49.0	11.3	60.3	12.1	27.7

Results and Discussion

If we look at Table 1 above, we see that the percentages of running words (tokens) from the high frequency levels (combined levels 1 and 2) are 90% for the simplified readers. In contrast the percentage drops to about 80% or lower for newspapers.

Furthermore, simplified texts used fewer words from the AWL than the unsimplified texts. The lower number of words from the AWL in the simplified texts would decrease the vocabulary load on those learners at the 2000 word level. An examination of the AWL words showed that in the simplified texts over half were repeated 2 or more times. In contrast, there were more words from the AWL in the newspaper texts and fewer of these words were repeated.

Lastly, the number of words outside the high frequency and AWL (outside levels) differed between simplified and newspaper texts as well. The number seems relatively high in the simplified text (6%-9%), and this might be interpreted as placing a burden on the learner. However, it was found that from half to two-thirds of the list contained proper nouns. For example, in the 1,000 word level simplified text, 64% of words in the outside lists were proper nouns. This contrasts with newspapers where 41% of the words in the Outside Levels were proper nouns. Proper nouns are often defined or explained in the text, and therefore do not interfere with reading fluency as would an unknown lexical item.

Research has indicated that 95% of the words in a text need to be known for comprehension and fluency. But it is important in selecting a text to look at the type of text and the frequency level of the words in the text. As seen in the tables above, 90% of words in the simplified texts are from the high frequency levels. Add to this the proper nouns found in fiction and we have roughly 95% coverage. For students at the 2000 word level this type of text would be appropriate. In contrast, the newspaper texts show a lower percentage of words from the high frequency levels (less than 80%) and more variety in words from the AWL and outside levels. For students at the 2000 word level this type of text would place a considerable burden on the learner in terms of unknown vocabulary. If the purpose of a reading course for this level of student is to develop fluency, then a great deal of pre-teaching would be necessary to prepare students for reading.

Conclusion

The Frequency Level Checker is able to analyze a text for the number and proportion of words that come from the high frequency levels of English, academic texts, and also to give a list of all other words in a text. This tool enables a teacher to quickly check the level of a text for an intended group of learners and make a decision about its appropriateness, or the need to pre-teach certain vocabulary items. As we saw from a comparison of vocabulary levels in simplified readers and on-line newspapers, texts will vary widely in the type of vocabulary they contain. What should an instructor keep in mind when selecting a text for the appropriate vocabulary level for a group of learners at the 2000 word level? The following suggestions could be used as guidelines:

1. To promote fluency and aid comprehension for learners at or below the 2000 word level, a teacher would need to select a text with at least 90-95% coverage by Levels 1 and 2 (the 2000 high frequency words).
2. It would also be worthwhile to look at the number of proper nouns which appear in the outside lists and check to see whether or not they would be easily understood within the context of the text itself.
3. Check the other words in the outside lists to see what families could be created. Grouping words into families will make learning easier. It would also be useful to check which words are used most frequently and may be central to understanding the text. These words could be selected and taught prior to reading, or they could be given a gloss on a separate sheet.

4. Check the number of words from the AWL and look at the words to see their usefulness for the intended group of learners. For students who intend to study at the college level, adequate exposure to and practice with these words is crucial.

A careful examination of vocabulary in a text reveals one dimension of its readability or ease of comprehension. However, it is one dimension and does not guarantee total comprehension of a given text. Factors such as background knowledge, knowledge of English syntax, and reading skills in general will also determine how well a learner understands a text. These other factors must also be considered when deciding on the appropriateness of a text for learners.

It is hoped that this tool will aid individual teachers in selecting reading material for their particular group of students. Comments and suggestions on this tool can be sent to the e-mail address at the beginning of this paper.

Notes

1. The Frequency Level Checker was developed with a research grant from Tokyo International University (Kawagoe City, Japan). The authors wish to express their gratitude for the university's support.
2. The word lists used for the levels in the program were adapted with permission from I. S. P. Nation's work at the University of Wellington, New Zealand. The original word lists for Levels 1 and 2 on were adapted from the General Service List of English, by West and later developed by Nation. Level 3 is the Academic Word List developed by A. Coxhead. For details on the Academic Corpus from which the AWL was developed see: Coxhead, A., 2000. A new Academic Word List. *TESOL Quarterly* 34;2: 213-238.
3. P. Nation's vocabulary levels test can be given to learners to get a rough guide to vocabulary size.

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Maximizing Potential in the Design of Multimedia Environments

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Abstract

The article presents in four sections some of the factors in designing two new multimedia rooms at Otsuma University. The sections are results of a questionnaire, main design parameters, problems with designs tendered by companies, and the outcome. Prominent factors in the process were: differences in designing rooms for language and literature, and culture courses as opposed to computer and IT courses; and intended pedagogic procedures. Specific key words are multi-purpose, amphitheater, dead space, sideways-room. The conclusion includes general comments about education and technology in Japan.

Introduction

In the summer of 1998, a decision was taken to replace two existing language laboratories, one at the Chiyoda Campus and one at the Sayama Campus. In contrast to the purposes of AV lecture theaters and computer rooms, these LLs had been primarily for the use of the Department of English Literature. The author's role was to provide a framework from within which the project team and faculty could discuss the central factors in creating multimedia rooms. An overview of this is reported here in four sections: the results of a questionnaire given to the department, the main parameters required in the design, problems with designs provided by companies, and the outcome. Each section includes brief comments on salient or interesting points. The sections do not follow a strict chronological order, do not provide detailed technical specifications, nor do they address administrative or financial issues. As such this report does not claim to be comprehensive but seeks to provide valuable pointers to those who are placed in similar positions of responsibility.

Questionnaire to Faculty

A detailed questionnaire consisting of sixteen sections, each section having as many as fifteen selectable options, sought the faculty's opinions about the proposed multimedia rooms. The main areas addressed were: (a) their place in the curriculum; (b) detailed desired areas of use for language, culture, and literature courses; (c) the intended pedagogic procedures they would adopt - (the preferred methodology was to start with a lecture style class or teacher-centered practice and then move to individual work or practice; rather than always being at the master console, most staff favored moving around the classroom); (d) the desired layout of the rooms - (Staff stated that their main dislike of the existing LLs was their physical alienation from students, namely being unable to easily get out from behind the master console, and being a long way from some students); (e) the amount and type of self-access necessary for their courses -(listening practice, watching English closed-captioned videos, working on assignments, particularly graduation theses, and using CD-ROMs for various kinds of study and research); (f) system requirements; (g) opinions and needs concerning authentic and non-authentic materials for language, culture, and literature courses - (closed captioned versions of films, news and documentaries; literature; pre-installed CD-ROM learner dictionaries, especially interactive ones, with pronunciation practice, pictures and videos clips); (h) avail-

able and desired support - (all the time, or at the beginning classes; all Otsuma AV lecture theatres, LLs, and computer rooms have an on-call phone link to the AV support staff); and (i) possible and desired training.

Comment: There is contradiction in the answers for (c) moving around the classroom, and (d) dislike of physical alienation. In Japan, students invariably place their bags in the aisles, and even when repeatedly asked not to do so they often forget. This is because the practice is not perceived as being an obstacle to the teacher or lecturer. It reflects the fact that for most of the students' educational life, certainly in junior and senior high school, their teachers have remained at the front of the class. This fact has consistently had a negative effect on the design of LLs, AV and computer rooms. Therefore, the opinions of faculty were divided as to whether, in the case of a rectangular-shaped room, it was better to have the master console at the end of the room as it traditionally is, or whether to place it in the middle of one of the long walls.

Parameters for Multimedia (MM) Rooms

The parameters below were based on: the results of the questionnaire, examination of recently installed multimedia rooms at other universities, including Waseda, Rikkyo, Aoyama, Sophia, and Tokyo Metropolitan, discussions with lecturers and teachers from other universities, multimedia specialists, and consultations with publishers of educational computer software. The following are some of the key parameters: (a) flexibility of room and system for multi-purpose usage; (b) a system framework which allows later expansion and additions, e.g. USB ports on monitor screens; (c) user-friendly system for staff and students; (d) an open system which allows interaction inside the multimedia room, within the university and beyond the university; (e) easy physical access and movement for students and staff: interaction, assistance, getting to printers etc; (f) vision and contact: staff and students able to see / speak to each other physically or over the system; (g) amphitheater in front of master console; (h) master console: on the long side or at the end the room; (i) easy access with split master console; (j) lowered or embedded screens and keyboards; (k) an additional shared central monitor for each pair of students; (l) on the master console, a separate monitor for continual viewing of student computer screens; and (m) 100% alignment of seating layout with the displaying of it on the control panel.

Comment: The underlined proposals resulted in the greatest division of opinion. The proposed side-wall orientation meant that teachers would be a maximum of four or five rows away from any student, as opposed to the standard room where students can be up to eight to ten rows away.

Problems with Requested Designs

The Sayama campus's room shape was less elongated than that of the Chiyoda and has different access points (doors). Thus, companies tendered about twenty different designs. Before the designs were tendered, a meeting was held at which the parameters above were outlined and their rationale explained. However, about half of the proposals failed to appreciate educational needs and the designs showed little flexibility for multi-purpose usage. It was the old problem of fusing the technological and educational elements. Particular problems were: (a) too much dead space; (b) poor physical access for staff and students; (c) bad lines of vision; (d) dominance of perception of teacher-controlled usage; (e) options reduced by department and administration demands for rooms with capacity for 70 students; (f) only one company had a system that was able to map the sideways-room seating plan identically with that of the master console display, if any single row across the room has more than eight students; (g) poor system technology for splitting master console; and (h) difficulties in interfacing traditional LL speech system and computers.

Comment: The poorest designs reflected the dominant image of computers as being for IT (Johoshori classes) where students would be seated at a screen learning programming languages or the use of programs such as Word, Excel, or PowerPoint. There was no allowance for interaction, either physical or on the system, which would be necessary with language or content courses; this would be necessary when working as pairs or groups on the

editing and compiling of assignments such as on an American author or literary work, cross-cultural gestures, or changing attitudes to sport in the UK. Better designs produced more open plans with circular or triangular shaped modules for 6 – 12 students. However, unless the students were multimedia specialists or engineers who as part of their course needed to get behind the equipment to make and change connections, that space became dead space. The shape of these modules, although visually attractive, made the practicalities of moving within the room difficult. It also meant that some students would have their backs to the lecturer or teacher, thus making activities which required switching between on screen and physical eye contact more difficult.

Outcome

The requirement of having rooms capable of seating 64 students meant that the master console had to be located at the end of the room. The master console was not split, nor was there space for an amphitheater.

- Easy access and movement through rows and aisles. Why is there always a desire to maintain perfect symmetry? We changed the original plans for the Chiyoda Campus to a non-equidistant 3-3-2 grouping of rows, and for the Sayama Campus to a 4-4 grouping. For Chiyoda, this created blocks of 24, 24 and 16 students. There is comfortable space for students and staff to move across the rows within these blocks. However, the even wider spaces between the blocks make movement across the room very easy. Furthermore, 5 cms were taken off each paired student module. Contrary to older designs, not as much desk space was needed because, first, liquid crystal (ekitai) slim screens have replaced the old style monitor and, second, the keyboard rests under the desk table but is visible through a glass surface and is also extractable.
- The additional shared monitor per pair of students is essential. It allows flexibility of usage. Students can view any other student's personal screen or any machine of the master console system (computer screen, DVD, OHP). For example, if a class is being trained in Internet advanced English searches and has to follow a number of stages, these can be viewed on the central monitor. Alternatively a student's screen displayed on the shared monitor allows other students, who are stuck on the same point, all to view the screen of a student who is being coached through it.
- Separate Computer and LL Speech Systems. The reasons for this were ease of use for students and staff; avoidance of compatibility problems; and weaknesses in speech recognition software, and the paucity of good non-authentic computer materials, although the situation is rapidly improving.

Conclusion

Whatever system is installed, sooner rather than later it will be dated by rapidly improving computer capabilities and newer technologies such as ADSL, 3G mobile phones, and Bluetooth. However, having looked at and used newly installed systems at other universities and the experiences of my own university, it seems that here in Japan many of the lessons of the first generation of LLs have not been learnt and that the same mistakes are being repeated. Primarily, there is still a tendency to provide finance for hardware alone, and to install some very impressive systems without addressing the fundamental areas, which have not changed. First, there is the need to clarify and establish the role held within the curriculum for multimedia rooms, which blend the new technologies, the software, and the courseware. Second, more research is needed to establish what areas of learning are helped by the new technologies and how these should be incorporated into pedagogic procedures and much more effort must be placed on the development of materials. Third, for the first two areas, budgets, training, and support are essential. Fourth, even if the first three areas are satisfied, students need to have easy access for self-study from on and off campus.

Two more areas are worthy of special mention. First, there is the question of the extent to which systems should be open or closed for e-learning, accessing the campus from home, and general Internet access. Second, for self-study or assignments, whether during class time, in AV centers, or off-campus, there is a need for clear and accurate guidelines on copyright laws, especially where the activity is for educational use without charge. Underlying, both of these areas are ethical and legal issues. The first is that of prescriptive views of the appropriacy of certain materials or how they are accessed. The second is that of protection of students and also retaining control over their actions, which reflects the extent to which the university can or thinks it can be held liable. All these issues must be carefully considered because each university visited had different policies, and these also differed between departments. The positions adopted by both administrations and publishers of materials were and are not always totally accurate.

Almost one year has passed since the submission of the outline of this presentation. The students and staff clearly enjoy the layout and general functionality of the multimedia rooms. In addition to the learning requirements for the language, literature and culture courses, students, some of whom were absolute beginners and technophobes, have gained a confidence with computers and the Internet. The experience of Otsuma, while special, is not unique, and contains aspects frequently encountered in Japan. There is still much room for improvement concerning the fundamental question of defining the role of the rooms in the curriculum, and of correctly blending the technologies, staff and student training, courseware, software, budgets, and staff and student access.

Motivational Aspects of Using CALL for Reading and Writing in EFL

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Abstract

One of the primary benefits of CALL (Computer Assisted Language Learning) is that it increases student motivation. This paper reports a brief review of literature and discusses EFL reading and writing through CALL, shifting paradigm of CAC (Computer-Assisted Composition), synchronous “chat” and asynchronous discussion, and CALL at a private university in Japan. One of the principal findings of the study is that both learners’ and teachers’ responses to the questionnaires such as the one developed for this study can represent positive evidence of instrumental reliability. However, negative motivational variables such as not submitting written assignments and not actively participating in cooperative learning projects were also found. This paper reports these findings and concludes by describing how data on EFL learners’ motivational factors can inform efforts toward improving foreign language education policy and program evaluation in Japanese universities.

Brief Review of the Literature

The motivational aspects for reading and writing have been widely studied and there is a vast of literature dealing with the issue. Here I would like to discuss the motivational aspects focusing on “differences in learning styles and preferences among students”.

Soo (1999) claims that students have significantly different language learning preferences and these preferences make any instructional environment, method or resource more effective for some learners and less effective for others. Soo concludes that the answer to deal with differences in learning styles among language learners does not lie in finding one super method that can cater to all learning styles and there can be no such method. However, the key to teaching all learners as effective as possible lies in identifying the needs and preferences of each learner and not fulfilling learners’ needs according to their preferences but helping them develop new ways to learn. The computer seems versatile enough to be such a medium if it is driven by well-designed software or courseware and properly utilized by well-trained teachers.

Under the similar discussion Ngeow (1999) also describes three complementary principles for addressing learning styles and strategy training in the CALL classroom and discusses ways to apply the principles to the planning and design of learning activities that enhance and extend students’ learning strategy repertoires. Ngeow concludes that diversity in learning needs and preferences calls for flexibility in teaching and learning approaches in the CALL classroom and that teachers need to be insightful and sensitive in creating opportunities for various kinds of computer-enhanced activities while students need to take responsibility for their learning by enhancing and extending their learning preferences to meet the challenges of different contexts.

Spratt (1999) also reports on the comparison of learners’ preferred activities with teachers’ perceptions of what those preferences were. The results have implications for syllabus and materials design and also for classroom practice and studies of teachers’ decision-making processes.

In addition, Bailey et al. (1999) discusses the minimal finding on learning style variables and suggests possible questions for future research and makes recommendations for understanding foreign language anxiety and increasing foreign language learning.

EFL Reading through CALL

Questions concerning web reading have recently received considerable attention, but there are a few researches to give appropriate answers. Hunter (1998) examines the emerging form of text on the English World Wide Web (text nouveau) and how it is influencing reading, in particular reading by non-native readers of English. Hunter claims that (a) web reading materials is radically different from traditional print forms with their pages of dense text and line wrap, (b) visible text structure cues and information-revealing document structure can enhance accessibility of text and reduce the readers' cognitive load, and (c) there is a need for a foundation framework for characterizing accessibility of text structure.

Singhal (1999) investigates the role of the computer as it relates to reading and concludes that in essence, computer assisted instruction and computer programs to teach reading hold great promise for becoming powerful instructional tools that increase students' engagement in reading, enhance reading comprehension, and improve reading skills. Such tools can also assist the teacher in developing a truly individualized reading program that can better meet the varied needs of students found in most classrooms. By using such a tool, teachers can vary the pace of instruction, review and reinforce learning, teach and address specific skills, enhance motivation, and provide immediate feedback. These features combined increase the likelihood that students' engagement in reading instruction will be increased. It must, however, be recognized that the computer is not meant to replace the teacher, but rather improve and enhance classroom reading instruction. Well-designed multimedia computer programs can allow students to apply what they learn in meaningful reading activities that meet their individual needs, and such programs can also stimulate interest and increase motivation. Instructional programs can be developed to teach reading and comprehension skills and strategies that go beyond simple busy tasks that students often respond negatively to. Reading through the computer has the potential to actively engage students in the reading and learning process because of its capabilities to meet their varied needs, and can help students perceive the value of success, and their own potential as readers.

Ganderton (1999) describes some of the interactions in the context of observing learners' reading strategies in performing reading tasks in L2 web-based authentic materials. He also discusses the strengths and limitations of the medium of the Web for the development and application of specific reading skills and knowledge areas, such as inferencing, use of text structure and synthesizing new information.

EFL Writing through CALL

Phinney (1996) mentioned that the early studies of CAC focused almost exclusively on word processing. Many of the publications dealt with case studies or anecdotes about the encounters of one teacher or writer with word processing. The promise of the computer as a writing tool seemed to match the newly strengthened emphasis on the writing process in English composition and rhetoric. Teaching methods that focused on multiple revisions seized on a tool that seemed to make those revisions easier and faster.

Among the motivational studies on the positive side, students who use word processors have been said to improve their attitude toward writing (Daiute, 1985; Phinney, 1991; Phinney and Mathis, 1990; Schwartz, 1984). Thus a good deal of the early research tried to support the hypotheses that computer-using students would write more, revise more, and produce better papers. On the other hand, studies done by Hawisher (1989) that compared CAC to composing with traditional methods often yielded mixed results.

In the nineties the CAC reached a certain level of maturity and the emphasis in CAC research has shifted to the changing writing behaviors and pedagogies engendered by the electronic medium, and the ways that computer technology affects how we think about the writing process. Although word processing in and of itself does not produce better writing or better writers, it does appear to change the way writers approach writing process. Haas (1989), for example, observed that in the word processing condition there was less planning overall, less conceptual planning, and more local planning than in the pen and paper condition.

Shen (1999) exams how computer-assisted writing (CAW) can help to ease learner's anxiety, and thus to improve writing proficiency through a pretest-posttest study and reports that the final results indicate that due to the natural learning environment, autonomy, and free space, CAW does to some extent, ease learner's anxiety in writing and helps to improve writing both in quantity & quality.

Shifting Paradigm of CAC

In the recent CALL classrooms the CAC community has moved from a focus on the word processor as a tool to an examination of the interactions among teachers, learners, and technology. The recent topics of interest have included the use of hypertext and hypermedia (multimedia) in writing, collaborative writing environments, electronic mail (e-mail), synchronous and asynchronous conferencing, and the changing relationships between teachers and learners in the CALL classroom.

E-mail has become the new "toy of choice" for many teachers who have discovered the Internet. Many teachers have tried to incorporate e-mail into their writing classes in some way. In the ESL/EFL teaching, the most common use of e-mail may be pen pals (Hoffman, 1996). In a basic pen pal activity, students write electronic messages to their pen pals much as they might write traditional letters. The difference is, of course, that mail is almost delivered almost immediately, so students can write many more letters than might be possible otherwise. I have found that my students enjoy what they perceive to be more personal contact and will write me short notes on e-mail to address questions or problems they would not normally bring up in class. Most importantly, the variety of "documents" my students have made using the computer has engaged their interest, motivated them to use English even outside the classroom, and helped them to learn the cooperative skills they will need in the future working world.

Asao (1995) examines the role of the Internet in the teaching of EFL and its pedagogical implications. Asao finds that lack of motivation on the part of the students in writing courses is largely a reflection of too much emphasis on accuracy and also in the traditional format of a writing course the students have no readers to whom they should address their messages and the content of their messages are often neglected. As Marshall McLuhan's axiom "the medium is the message" applies to e-mail, Asao claims that it is possible to compensate the neglected area of language learning and reformulate its paradigm.

Synchronous "Chat" and Asynchronous Discussion

One of the major benefits of a networked writing class can be found in both synchronous "chat" and asynchronous discussion. Synchronous "chat" allows writers to conduct information exchange or discussion through the keyboard. Their comments can read at almost real-time speed by other participants, who can then respond. Batson (1993) points out that more students participate in an online classroom because several students can be writing their contributions at the same time.

Kitao (1998) discusses the role that communication in general and synchronous communication in particular plays in language learning and how students can be introduced to it at two Internet sites, SchMOOze University and Dave's ESL Café Chat Central. Kitao also reports the results of a survey of non-native English speaker who uses synchronous communication sites for, at least in part, the purpose of improving his/her English proficiency, even if the person is not currently involved in formal English courses. Kitao concludes that among the many uses of the Internet for English language students, synchronous communication in an activity with particular promise, because it allows students to interact with others in English in real time. This study involved participants at two such sites. In addition, Kitao & Kitao (1999) further discuss the justification of for using chat and resources available on the Internet for the students and teachers who want to use chat.

Markley and Herbert (1999) examined a widely used software program, the *Interchange* application of the *Daedlus Integrated Writing Environment*, and claims that it is a flexible tool for use in a foreign language classroom which can provide an excellent learning environment for Japanese students. Because it allows large groups of students to have time-efficient communication in a non-threatening atmosphere, even when the class is composed of students of mixed levels.

In their second section review of *New Ways of Learning and Teaching: Focusing on Technology and Foreign Language Education* (Muyskens, 1997). Bradley and Lomicka (1999) reported that technology-enhanced interaction can foster virtual learning communities, promote interaction across linguistic and cultural boundaries, and provide a different set of classroom discourse conventions in which to communicate.

Freiermuth (2000) also suggests that online chatting as tool allows students an avenue of more relaxed interaction compared to speaking aloud so that they have more time and produce more language without having a communication breakdown.

Asynchronous discussion allows writers to express their opinions or discuss on a particular topic with their classmates or other writers even at a different institution through the Internet. One of the outstanding EFL writing examples through CALL while enhancing electronic literacy is collaborative learning projects among students who belong to different universities called "Interactive Writing Community (IWC) on BBS web site." (Imamura & Mizuno, 2000). The main concept behind such a project was "write to be read." It led to become aware of the process writing while increasing the motivation to get feedback on their work and exchanging ideas among students who share similar interest. In addition, IWC extended with "Intercultural Classroom Connections (ICC)" that was based on Japanese cultural topics and exchanged opinions on them among students. Obviously overseas students learned much about Japanese culture through the writing activities.

Reading and Writing Using CALL at a Private University

Nozawa (1999) reports that a new web-based CALL program was added to the 1998 revised EFL curriculum for freshmen and sophomores in two faculties (Economics and Business Administration) at Ritsumeikan University and discusses the pros and cons in relation with the information literacy. One of three selective courses is an English-only course with 12 credit hours for the minimum requirement for a bachelor's degree. Among the subjects English 4, 8, and 12 are CALL classes.

English 4 is a required subject for all the freshmen who belong to Faculties of Economics and Business Administration and is combined with information literacy education because most of them lack the basics. Key-word vocabulary and reading materials in English 1 (reading class) are provided as the vocabulary drills and speed reading program. In addition, students are required to search for information on research topics based on the content of English 1 using search engines, write 5-7 reports for the 14-week semester, and submit them using e-mail to their instructors. The students are also required to do computer projects from the text *Internet English* (OUP) in 2000.

English 8 is only for students who seek the 12-credit-hour language requirement to receive an undergraduate degree. There are three programs (Academic Career Program, Business Career Program, and Liberal Arts Program) available at present. The students are again required to search information on given topics that are related to English 7 (listening) texts and submit the assignments as English 4. However, the summary should be transferred into the web pages as a small group collaborative project and later group oral presentations using the created web pages are done.

English 12 follows the basic style, but adopts a more individualized learning style with more online listening exercises. Each student must choose a topic to research and create both web pages and a PowerPoint file for an individual oral presentation.

Throughout all the CALL classes the students spend a great amount of time to seek for appropriate information on their research topics on the Internet. As a result, both faster reading on the web databases and writing skills using word processor and e-mail are essential to accomplish all the tasks.

According to the results of the questionnaires (1998-99), 63% of the freshmen responded positively regarding the contents for English 4 as a whole while 71-78% of them satisfied respectively. In addition, among learned skills, 56.4% and 54.8% of them pointed out “collecting information via the Internet”; 35.7-38.1% for “faster reading”; 42.7% and 27.8% for “typing/keyboarding”; 39.2% and 29.4% for “e-mailing in English.”

Similarly 67% of the freshmen responded positively regarding the contents for English 8 (1998) as a whole. Furthermore, among learned skills, they pointed out “using the Internet” 61.7%; “creating Web pages” 39%; “collecting information & analysis” 26.2%; “writing” 15.6%. 35.5% also felt “no extra burden” while 62.4% felt some burden because they were required to complete many assignments and there were time-consuming activities.

Similarly 58.8% of the sophomores satisfied and 66.6% of them felt interesting regarding the contents of English 12 (1999) as a whole. Moreover, among learned skills, they pointed out “using the Internet” 28.9%; “creating Web pages” 17.3%; “collecting information & analysis” 11.6%; “writing” 11%. With quite similar results for English 8, 33.8% of them also felt “no extra burden” while 66.3% felt “some burden” because they were required to complete many weekly assignments.

Conclusion

Reading and writing through CALL with spirit of “read more efficiently, write more fluently” is an essential part of the EFL program at Ritsumeikan University BKC and some other higher institutions in Japan. With learner-centered approach, students should actively be involved in a variety of extensive reading activities while producing “comprehensible-level” compositions to be read by others. There is still room for improvement in motivating students to enjoy reading on the local server programs or huge amounts of resources on the Internet and write to summarize the research data in a time-efficient manner while enhancing communication in the CALL classes in a non-threatening atmosphere. I believe that motivation of the students is the key for successful CALL that create enjoyable and active learning environments that are not easy to find in the traditional classrooms.

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The Parser Program as a Tool for Learning Verb Complements

Toshiko Sakurai

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University of Illinois at Urbana-Champaign, U. S. A.

Abstract

The part of a clause following the verb phrase depends on the verb for its basic structure. Each English verb has its complement configuration. Japanese college students are supposed to learn the complements of major verbs, but many of them seem uncertain about this area. Their lack of confidence tends to be a barrier to communicating in English. Given the considerable concentration and practice needed to understand the complement configuration, repeated correction of such complement errors by the instructor is unavoidable. To make the correction process more effective, one of us (Sakurai) is utilizing a parser, which shows students how a sentence is constructed and tells them whether their input is syntactically acceptable or not.

The Problem

The part of a clause following the verb phrase depends on the verb for its basic structure (Leech & Svartvik, 1994). Many students of English at the language institute where Sakurai was then teaching had difficulty with sentences such as “Ken asked Bill to put a stamp on an envelop” or “They watched children playing in the park”. When students were asked to repeat this type of sentences, they could not go beyond the object of a verb, “Bill” or “children.” The teacher’s repetition of these sentences rarely facilitated students to complete the sentences. This problem motivated Sakurai to provide a tool for presenting English structures as well as for testing students’ hypothesis about them.

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while reducing their anxiety, thereby saving time and energy for both learners and teachers. Smith supports the consciousness-raising method as follows:

It may be even rewarding to discover formal regularities in a more or less conscious manner on one's own, without the aid of the teacher or textbook, but, again, what time is needed to accomplish this in more than just a piecemeal manner? [...] By revealing some pattern or system in the target language, the teacher holds out the promise of a short cut as far as learning is concerned (via practice, of course). (Smith, 1981)

Later, Sakurai noticed that many college students were uncertain about verb complements which should have learned in high school. Even though all the high school English textbooks for second or third year students contain a list of verb complements, the lists appear not to be used effectively due to a lack of time. Therefore, it seems important to review this area.

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As with all unification approaches, both words in the dictionary and phrase structure nodes built up by the grammar rules are tagged with lists attribute/value pairs known as *AV matrices*. For instance, the dictionary entry for the word "I" appears as

(I (:cat pn)(:person 1)(:number sng)(:case nom)))

Here the first attribute "cat" is used to indicate part of speech, and its value is pronoun (pn). The second attribute is "person" and its value "1" indicates that the word is first person. Additional attribute/value pairs specify the word as singular number and nominative case. Verbs contain pairs such (:trans trans1) which define the complement type of the verb to be simply transitive — that is, a single complement in the objective case.

The parser can interface with a KIMMO general morphology analyzer (Antwort, 1990) but for English grammar it utilizes instead a special-purpose analyzer which efficiently handles the simple concatenative morphol-

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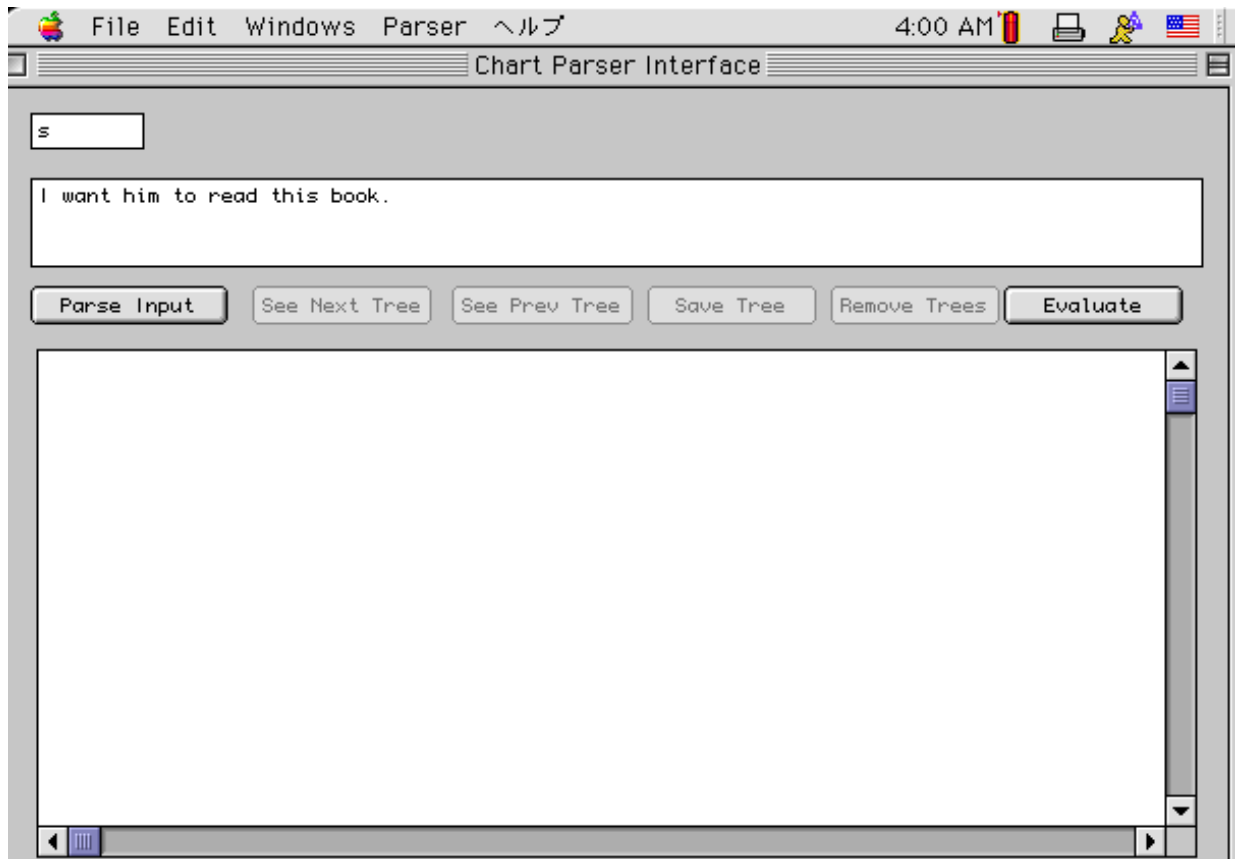


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where x0 refers to the left-hand constituent (in this case s) and x1 and x2 refer to the various right-hand constituents (here, np and vp, respectively). The first two equations provide number and person agreement. The third equation expressed the requirement that the sentential subject be in nominative case. Of course, actual English grammar rules are generally more complicated than this simple example would suggest.

When a rule is able to construct a new constituent node, some equations may serve to construct a description for that node in the form of an appropriate AV matrix. Thus, the fourth and fifth equations above build a simple A/V matrix for the s constituent, through which the sentence inherits the person and number of its verb phrase.

The AV and equation syntax support disjunctive notation in almost every position, which greatly simplify writing the dictionary and grammar; as for example the dictionary entry for the word “you”:

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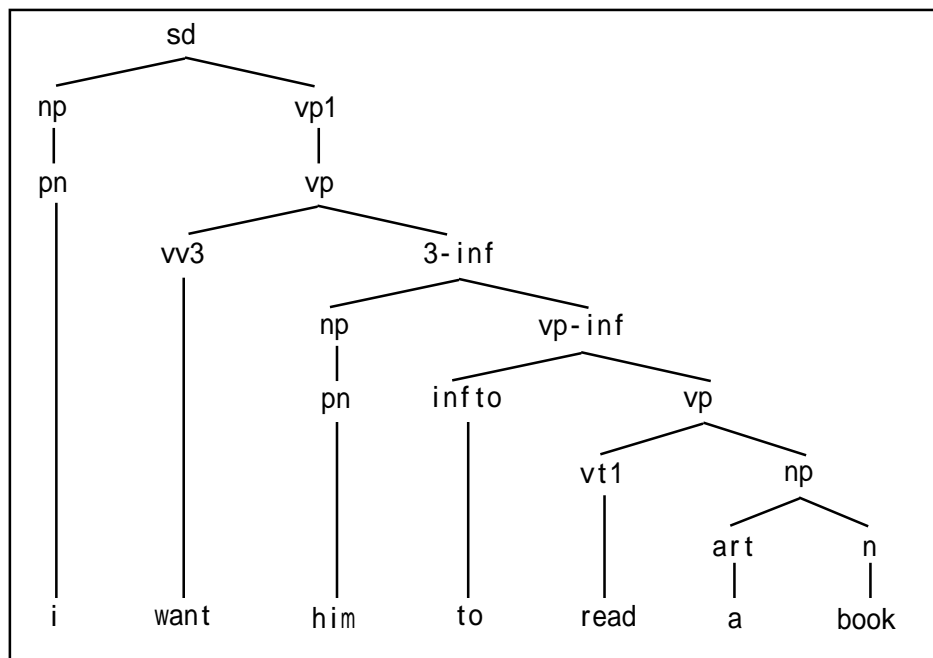


Figure 2. Parse tree for “I want him to read a book.”

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For a technical description of this parser, see Hart (to appear).²

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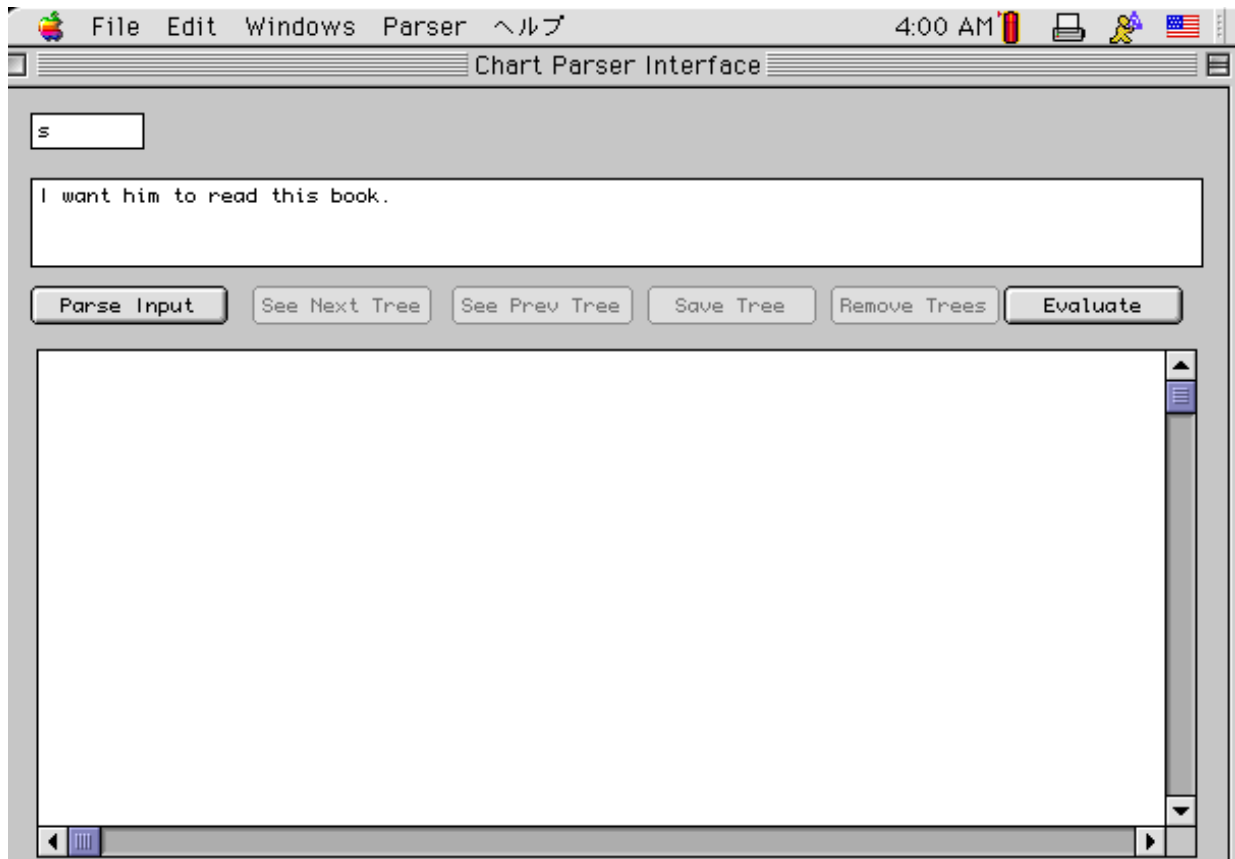


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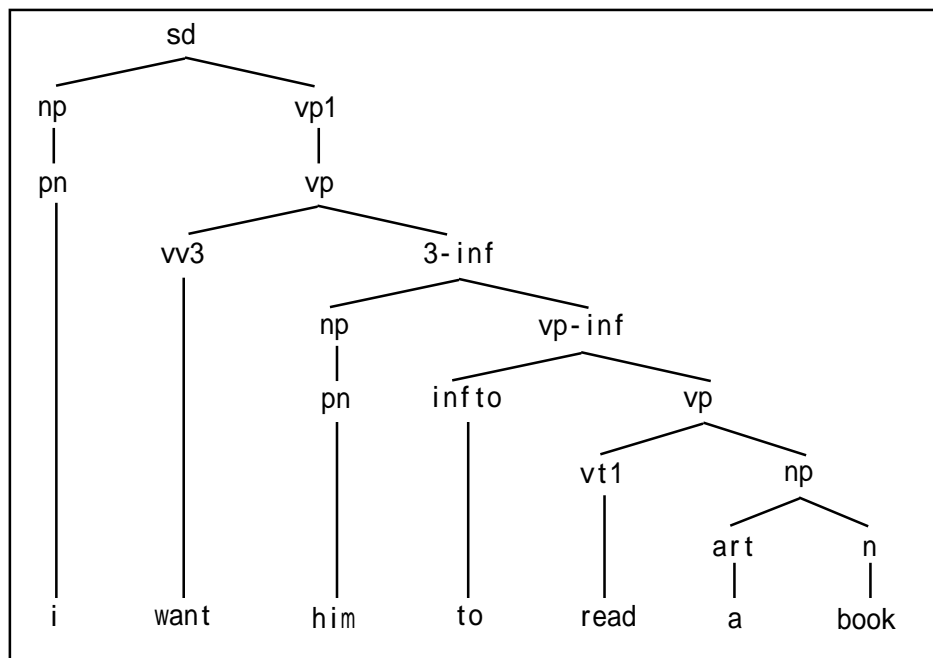


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Phoneme Acquisition Models

Kaoru Iseno

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Abstract

The interactive phoneme acquisition models, both in processing and production of L2, of Japanese adult learners of English in an EFL environment using the anticipated phoneme hypothesis will be presented. Anticipated phonemes are inter-lingual phoneme inventory in which the closest L1 phonemes are substituted with the L2 phonemes, and are often formulated in the early stage of language learning.

When first exposed to written English, Japanese learners will attempt to read it with the help of Romaji syllabication and transfer Japanese phonemes that sound closest to its Katakana writing. If, at this stage, the learner is not exposed to authentic L2 phonemes, as is often the case in formal learning, the phonemes they use will form an anticipated phoneme inventory which will soon become fossilized, hindering further acquisition of L2 phonemes. This will cause difficulty in speech processing and result in heavily-accented English in speech production.

Phoneme Acquisition Models

In order to fully understand the models presented below, first the Japanese writing system will be explained. Japanese use four different sets of letters in writing, namely, *kanji* or Chinese characters, *hirakana* or cursive syllabary, *katakana* or square hirakana, and *Romaji* or roman letters. So for the Japanese words for dogs and cats “inu” and neko” are spelled in kanji and hirakana, as shown in Table 1. “Dog” and “cat” are also used as loan words and these are written in *katakana*, although they are pronounced using typical Japanese CV syllables as /doggu/ and /kyatto/.

When children become 4th graders, they learn *Romaji* or romanized representation of Japanese in school. Thus “dog” is spelled “doggu” according to its pronunciation and “cat” as “kyatto”. In other words, before they start learning English in junior high school at the age of 13, they can read roman letters to some extent and this will later cause formation of anticipated phoneme inventory when they start learning English

Table 1. Writing System of Japanese Language

	Type	Origin or Usage	Samples	
			dog	cat
1.	<i>Kanji</i> (Chinese characters)	mostly imported from China	犬	猫
2.	<i>Hirakana</i> (cursive syllabary)	developed from <i>Kanji</i> characters	いぬ	ねこ
3.	<i>Katakana</i> (Chinese characters)	used mainly for loan words	ドッグ	キャット
4.	<i>Romaji</i> (Roman letters)	Romanized representation of sounds	doggu	kyatto

Figure 1 illustrates the formation process of anticipated phonemes. Anticipated phonemes are defined as “a set of interlingual phonemes that L1 Japanese learners of EFL have developed to use for lexical recognition by substituting part of L1 phonemes with L1 phonemes and then stored in the long term memory.

1. When a child sees a dog for the first time, s/he does not have phonological knowledge of how to express what it is.
2. Soon they learn mother tongue for a dog: iinu.
3. They learn letters for idog and acquire graphemic representation.
4. When exposed to the English word idog,
5. S/he tries to read it with the help of Romaji reading strategy.
6. Thus the anticipated phonemes for idog is formulated and stored in the long term memory.
7. When s/he hears /dag/, s/he analyzed it as ida: gu, which does not match any of the phonemic representation in the anticipated phoneme inventory and thus comprehension is hampered.

It is also important to point out that in Japan, English is taught in Japanese by Japanese teachers of English, who are quite often incapable of producing NS speech. Thus Ss do not receive authentic input when they learn English and this further strengthen the anticipated phoneme inventory.

Table 2 lists a set of American English phonemes and their proximates in Japanese. This list is based on minimal pair listening comprehension tests I conducted to 184 secondary school and college students (Iseno, 1991).

Table 2. Comparison of American English Phonemes and Japanese Phonemes

American English Phonemes Substituted with Japanese Phonemes	
American English Phonemes	Japanese Proximates
a æ ɐ	a
i: i	i
u: u	u
ei ɐ ɛ	e
ou ɔ	o
f h	h
v b	b
r l	r

The four phone alterations in Table 3 cause the most errors in minimal pair listening comprehension tests. Here the dissociated phonemes are defined as part of the anticipated phoneme inventory that impair speech processing.

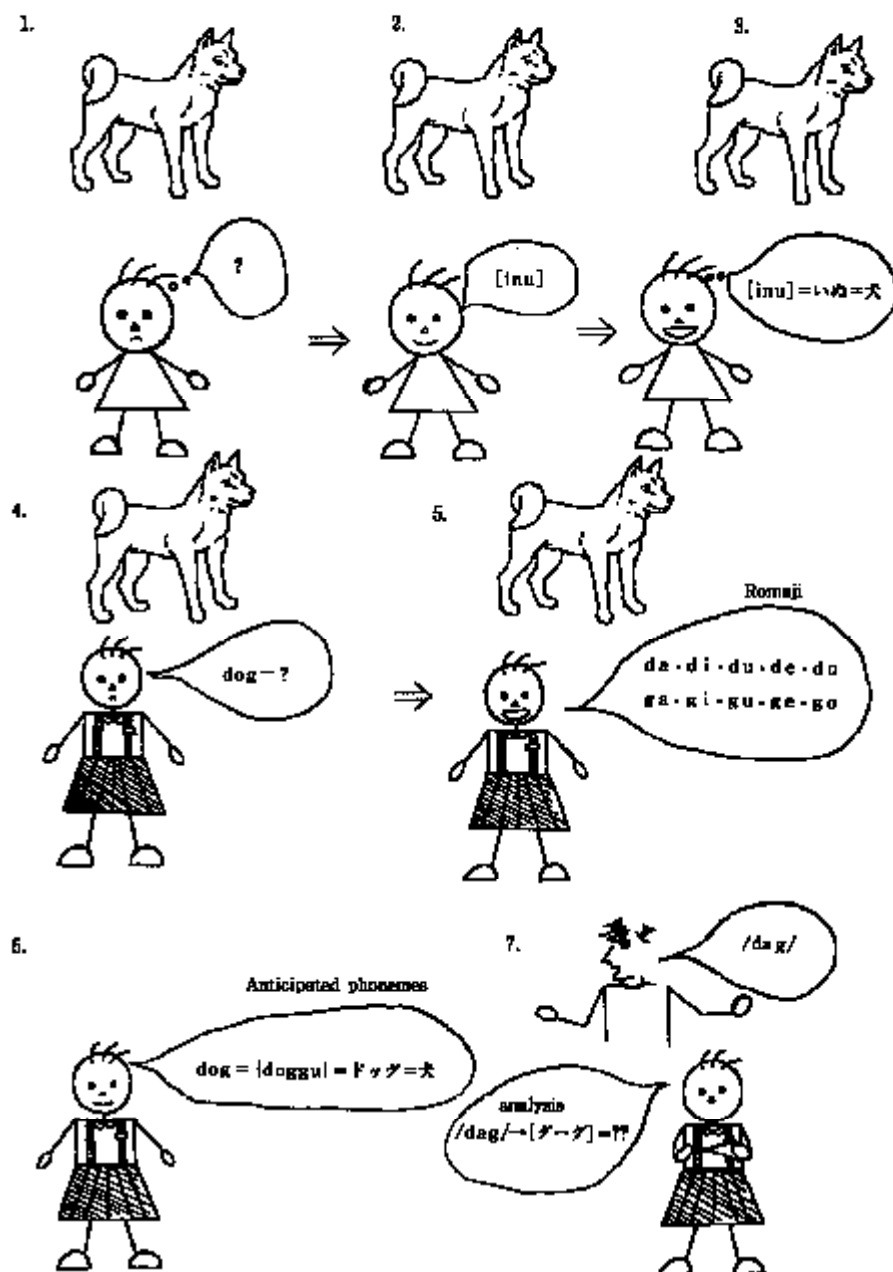


Figure 1. Formation process of anticipated phonemes

Table 3. Samples of Dissociated Phonemes

1.	flapped /t/ /d/ and /r/ /l/ as in “spilling and spitting”
	In this pair, flapped /t/ in “spitting” sounds close to Japanese /r/, which is also the anticipated phoneme of “spilling.
2.	dark /l/ and /fÓ/ as in “rolled” and “rode”
	In this pair, the anticipated phoneme of dark /l/ in “rolled” is /ru/. In articulating dark /l/, the mouth cavity is “back-low”, rather than “mid-high” as in /ru/. Thus both “rode” and “rolled” are perceived as /rood/.
3.	glottal /t/ and /d/ before syllabic consonant /n/ as in “heartened” and “hardened”
	In this pair, learners anticipate /t/ and /d/ to be aspirated, however, when glottalized, both are perceived as /ha:nd/.
4.	laterally released /t/ and /d/ before syllabic consonant /l/ as in “metal” and “medal”
	Laterally released /t/ and /d/ in “metal” and “medal” respectively are both perceived as /meruru/, causing further confusion with /r/ or /l/, both of which are also perceived as /ru/.

I also conducted a dictation quiz to secondary school students and from the errors they made, the following phone alterations on phonological sentence level that result in allophones are specified as causes of difficulty in listening comprehension.

Table 4. Phone Alteration in Sentences

1.	Reduced forms of personal pronouns: e.g. This is <i>her</i> class. Does <i>he</i> have any money?
2.	Phonological syllabication: e.g. How old <i>is his</i> sister? We enjoyed <i>it a</i> lot.
3.	Reduction or contraction of other particles: e.g. I <i>didn't</i> see you in class. He <i>is going to</i> come.

To sum up, in the anticipated phoneme inventory, contractions, reductions and other phone-altering factors in lexical level, and assimilation, geminations, and phonetic syllabication in phonological sentence level are not incorporated. The learners therefore assume the pronunciation of each word from its spelling and anticipate sentences to be pronounced word by word in the strong form of pronunciation. When exposed to English sounds of NSs, they will have much difficulty in speech processing, for few words are pronounced neither in strong forms nor without any phone-alteration in unmonitored speech.

Kohno proposed a listening comprehension model based on the models of Pimsleur (1971) and Atkinson-Shiffrin (1968). This model may explain L1 speech processing of native speakers. However, no crosslinguistic influence (Kellerman & Shardwood-Smith, 1986) is incorporated to account for Lt listening comprehension by non-native speakers. Figure 2 shows the phoneme acquisition model of L1 Japanese learners of English.

In this model, L1 proximate phoneme substitution is defined as “to substitute the target phonemes with similar or proximate L1 phonemes both in speech processing and production.” Romaji reading strategy refers to the application of morphophonological rules of romanized representation of Japanese phonemes. Katakanaization is used here to refer to the identification by “graphophomic images of the aural input.” (James 1986)

As shown in this model, the learners employ anticipated phoneme inventory and *katakanalization* in order to identify the graphophomic images of aural input, which are then translated into Japanese to comprehend. In short, learners come to comprehension only after they have succeeded in reconstructing the visual images of the words they hear and translating them into L1.

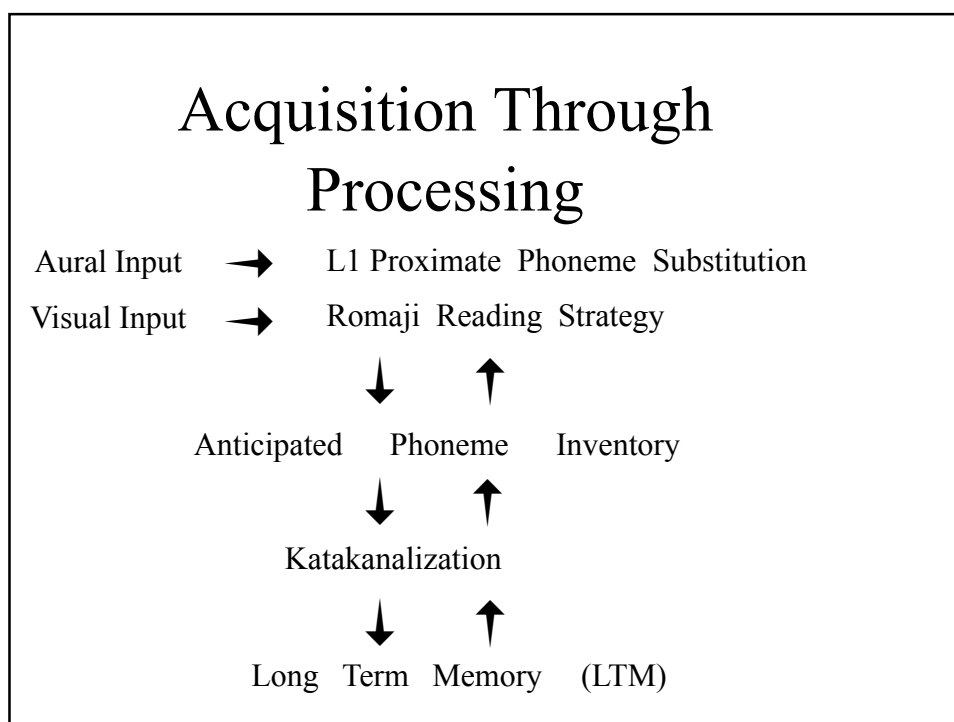


Figure 2. Phoneme acquisition through processing

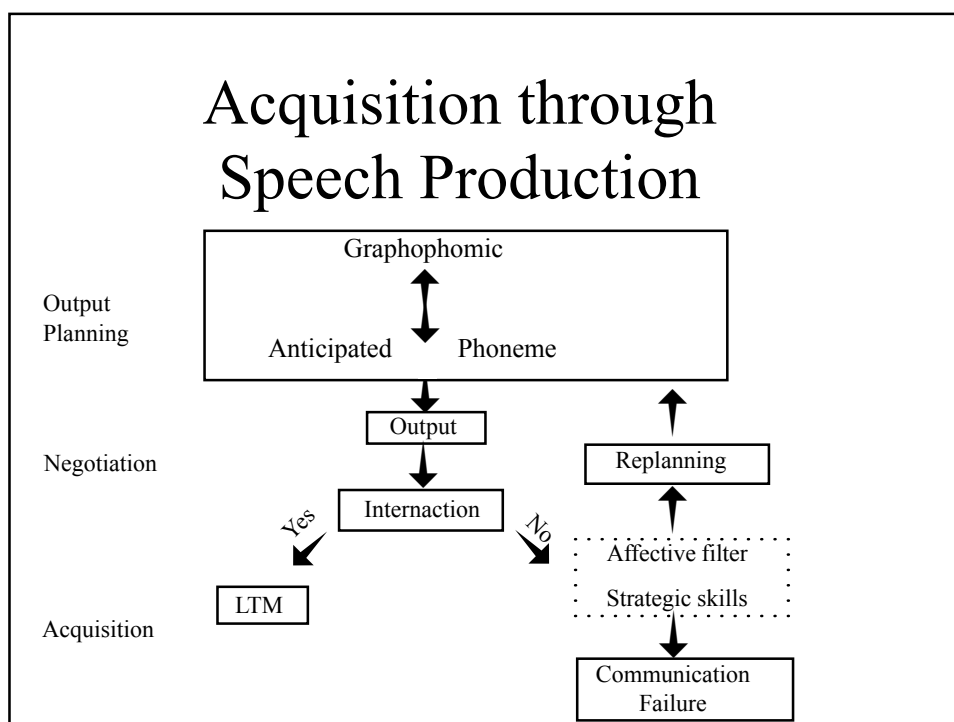


Figure 3. Phoneme acquisition through speech production

Conclusion

Phonemes are acquired not only by processing but by production as well. Unlike the phonic transfer discussed in James (1986), which refers to the transfer of L1 phonemes in the production of L2, the anticipated phonemes affect both productive and receptive behavior of learners. Anticipated phonemes differ individually due to the past experience of each learner, and more L2 phonemes will be incorporated into one's anticipated phonemes, substituting L1 phonemes, as learning progresses. When given acoustic speech input, learners will try to analyze the phonemes by identifying them with anticipated phonemes. If successful, or if the input phonemes and anticipated phonemes match, learners will be able to comprehend the meaning. And if not, listening comprehension will be impaired. The same is true for production. Ironically, successful interaction will accelerate fossilization of phoneme inventory, resulting in heavily-accented speech. Ringbom (1986) analyzed cross-linguistic influence in speech processing of L1 Finnish learners of L2 English and concluded that Finnish learners at school store words in graphemic, not their phonological form. The perceived language distance between Japanese and English is even greater than that between Finnish and English. Consequently, Japanese learners must go through a further complicated processing of putting the graphemic form of L2 lexicon into Katakana. In short, the environment of L2 English acquisition for Japanese learners can be concluded the least optimum.

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Practical Advice on Administering Internet Servers for Language Education

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Abstract

This article focuses on technical issues for language teachers interested in using Internet servers in providing language education on line. In order to put such classes into practice, you have to have some knowledge of server computers and the mechanisms and protocols required in setting up Internet or Intranet servers.

The author will explain the mechanical terms and necessary tools easy-to-understand language so that even intermediate users of computers can administer servers. In addition, he will discuss potential and basic troubleshooting of Internet/intranet servers.

Setting up and administering Internet servers —Unix, Linux, Windows-NT, or even Macintosh machines—is best accomplished in cooperation with the IT manager and staff in your university's or school's computer center. However, successful use of Internet technologies demands both the understanding of Internet protocols, and the ability to communicate your goals as accurately as possible with the IT staff. This article will provide the meanings of the necessary technical terms, devices and applications for using computers to deliver language teaching services on line.

What is Brought to Language Teachers by IT?

The recent rapid progress of the Internet technology brings us, language teachers, various possibilities to teach languages on line. The infrastructure (including hardware) is important. However, managing information is more important. It means what ideas you have and how you focus on and express them on the Web and so on. Especially for the faculty members studying on Humanities, the contents are extremely important. If the environment of IT is well prepared and if you don't have any information to give, technology is just technology and it doesn't give you any progress. But if you have a lot of ideas and information to present, Internet Technology brings you a great help.

The author is not a tech-person but a language teacher. Therefore you might say that he does not have to master computer technology. When you do not have any appropriate persons at your university or school and you would like to give services on networked server computers, you have to learn a lot about networking and computer technologies. So the author would like to introduce his experience.

The Environment at the Author's University

There are three faculty members on computer technology and two IT staff who manage the whole networked computers (about 10 servers and 200 client computers) in the university, including machine maintenance. There are about 800 students studying on Humanities who are not so interested in the mathematical knowledge of computer technology and not so good at it, but who want to use computers for net-surfing and e-mailing. And students attend at most 24 lectures a year on word-processing, tables and databases including networking. It is apparently not

enough for students to well operate computers. If you give classes of languages using computers, you have to teach how to operate computers even in language classes. This is the reality of our university. Moreover if you run an all-in-one server for realizing your computerized language classes, you would like to reduce time for maintenance of the server and would like to take enough time to create class contents. Then you have to make policy on computerized language classes.

Policy: What You Really Want to do in Language Learning Classes Using Computers?

The author believes that the Web server is the most useful service for language learning. Using Web server, you can provide a lot of contents of language learning: texts, databases, graphics, movies, audio sources and the combinations of them all. And you can give various methods in class using those contents: for example, to let students discuss on the articles on the Web or on the pictures or graphics on the Web, then let them give responses back through Web pages using CGI program associated with databases. Students also read other students' responses on the Web on the spot, then they reply to them as quickly as possible. This gives interactivity to language classes.

Useful Devices to Realize the Interactivity in Computerized Language Learning

As for the Web technologies, you would better have the knowledge of HTML (HyperText Markup Language), CGI (Common Gateway Interface, including PHP which is a little different from but functions in the same way as CGI), JAVA or JAVA script (Programming Language or script language on the web) and relational databases (such as Postgresql, Mysql and Oracle). To know about Streaming Video and Streaming Audio is much better to realize the interactive language classes.

Table 1. Useful Web Technologies

	Description	Details
HTML	HyperText Markup Language	
CGI	Common Gateway Interface	
PHP	Preprocessor engine	Hypertext preprocessor
JAVA	Programming Language	Like C Language but more sophisticated
JAVA script	Script Language	
Postgresql, Mysql Oracle	Databases	Relational Database, SQL Databases
Darwin Streaming Server	Streaming Video and Streaming Audio server	Apple Inc. developed Open Source program QuickTime technology, MP3
Real Server	Streaming Video and Streaming Audio server	RealNetworks inc. developed. Commercial Edition (full functions) /Free Edition (limited functions), MP3

Streaming Video and Audio Services on the Web

As the streaming servers, two servers are available: Apple's Streaming Server (QuickTime Streaming Server or Darwin Streaming Server) and RealNetworks' Real Server. Table 2 is a description of the requirements for RealServer from the RealNetworks' website.

Table 2. Real Server 1

RealServer Basic 7.0 Requirements

The RealServer Basic 7.0 Server is an open standards-based software system that delivers choreographed multimedia presentations — audio, video, images, slides, web pages, and text — over the Internet or corporate intranets to up to 25 simultaneous users.

RealServer Basic 7.0 includes Intel streaming Web Video Technology, Live SureStream, and customizable HTML-based administrative interface.

Supporting Operating Systems and Hardware

Processor

Operating System

Intel Pentium

Windows NT 4.0 or 2000 Workstation or Server, Linux 2.2, glib c6, SCO 7.0.1, 7.1.0, 7.1.1, FreeBSD 3.0 Sun SPARC Solaris 2.6, 2.7, 2.8 SGI IRIX IRIX 6.2, 6.5

Memory Requirements

RealServer Basic and RealServer Plus require a minimum of 128 MB of RAM to run optimally.

For RealServer Professional, 256 MB of memory is recommended.

Adding more RAM to a RealServer may increase the number of clients the machine can serve simultaneously.

Sites that plan to serve 1000 or more simultaneous clients should consider using 512 MB of RAM or more.

Bandwidth Requirements

Bandwidth required for serving content can be calculated using the following equation: (“data rate of clip in kbps ‘X’ max number of simultaneous streams”).

Example Bandwidth Calculations:

Stream Data Rate

Max Size of Audience

Bandwidth Required

Example Connection

20kbps

60

1200kbps or 1.2Mbps

T1

60% 20kbps, 40% 80kbps

100

4400kbps or 4.4Mbps

Fractional T3

80kbps

100

8000kbps or 8Mbps

10Mbps fractional T3

20kbps

2000

40000kbps or 40Mbps

T3

Storage Requirements

The RealServer 7.0 application requires about 8MB of storage plus storage for your media content.

Single rate media storage requirements can be calculated with the following equation:

(“bit rate of clip in kbps ‘X’ length of clip in seconds”) divided by 8 = KB required disk space.

SureStream clips are more difficult to calculate as each clip has multiple embedded data rates. To figure out the storage requirements the above equation is used for every data rate in the file. The data rates in the file can be found at encode time in RealProducer’s view statistics panel.

Example Bandwidth Calculations:

Data Rate of the Clip

Length in Seconds

Storage Required

20kbps (single rate)

180

450KB

20kbps (SureStream)

20kbps rate

12kbps rate

8kbps rate

180

900KB

Server Requirements

To make the best use of RealAudio and RealVideo, you must have a Web site and a registered domain. RealServer 7.0 is compatible with any Web Server which supports configurable MIME types, and has been tested with the following Web servers:

Apache 1.1.1

Netscape Netsite and Netscape Enterprise Server

NCSA HTTPD versions 1.3 or 1.4

O’Reilly Website NT

Spinner version 1.0b12 through 1.0b15

CERN HTTPD version 3.0, EMWC HTTPS version 0.96, HTTPD4

Webstar and Webstar PS

Mac, Mac HTTP, Microsoft Internet Information Server

NCSA HTTPD versions 1.3 or 1.4

As is clarified by this description, the bandwidth of the network is the most important for service performance. It can also be said to Apple's QuickTime Streaming Server. The author installed Darwin Streaming Server onto a Linux Machine (Fujitsu Deskpower T16, RAM: 80Mb, Hard Disk Drive: 8Gb+3Gb, CPU: Pentium processor 166Mhz). He experienced rather good performance of it even in the 10 base-T based Intranet environment, but the access from outside through ISDN line was not good. This experiment was limited to the only one access to the server, so the result of multi-user accessing will be expected much lower. Perhaps the bandwidth of over 100 bps even in the intranet will be needed. It is needless to say that the greater bandwidth is the better. However, if you hope the smaller group (5 or 6 students) to access to the server from client computers, the not best but rather good performance could be expected for limited use. The installing process of the Apple's Streaming Server was very easy. It took only 5 minutes to install it. The configuration of the server is also easy. It is happy to get server software for free. Apple calls two streaming video servers differently: QuickTime Streaming Server (QTSS) and Darwin Streaming Server (DSS). But these are basically the same. Apple calls the streaming server software for MacOS X server QTSS and the one for other operating systems DSS, which is based on GPL free software license.

Creating Streaming Video Contents

Nowadays you can easily get a low-cost video editing environment. If you have a digital video camera with IEEE1394 port (Apple calls "FireWire port" which is a kind of In/Out interfaces) and a recent high cost performance computer with IEEE1394 port or card, you do easily edit the video. Free-of-charge or low-cost video editing software is also available. The matter is that more than 10 Gbyte hard disk drive and high speed CPU and memories for the faster video rendering are necessary, but low-cost large hard disk drives, low-cost large memories and low-cost computers with high-speed CPUs have been now available. Therefore you don't care for this issue.

Which Server Operating System (OS) to Choose

The trend of the computer operating systems is Unix-based OS, such as Windows NT, Windows2000, MacOS X server, MacOS X (which will be released soon), Solaris, Linux, FreeBSD, and so forth. These Unix-based OS's are useful for networking and for server/client services, but they are difficult to operate if you are accustomed to GUI-based OS (Graphical User Interface based operating system), such as Windows95/98 and MacOS (earlier than OS version 9). Because Unix-based operating systems are based on CUI (character-based User Interface). When you operate Unix-based servers, you have to have the knowledge of the character-based computer operating commands which is based on the C language. If you are not a specialist of computer technology, it takes much time to learn operating commands and functions of Unix.

Moreover the matters of Internet security are more complicated. When you are going to provide various services on server computers, you must lower the security policy on the server computers. If you are much nervous on security issues and you get the security policy much stricter, the client users are not satisfied with the services. The security matters on server computers seem to be the double-edged swords. But if you would like to run a networking server computer for yourselves, this cannot be avoidable and the responsibilities for the network security fall strictly and heavily on you. So you have to be fully aware of the reality.

The author believes that it is better to leave the server-management to trustworthy IT staff if it is possible.

The author introduces three ways to run a network server, according to security policy.

1. Full Internet Server: providing full Internet services on your server (Figure 1)
2. Intranet Server 1: providing full services limited to your institution, completely separated from Internet. Users cannot go out of the Intranet to Internet. (Figure 2)

3. Intranet Server 2: through proxy server or firewall, providing services limited to your institution. Users can go out of the Intranet to Internet. (Figure 3)

The order of network security is (2) > (3) > (1).

When there is nothing for it but to manage Unix-based servers by yourself, the author recommend that you should begin with type (2), then go step by step from type (3) to type (1). It should be better for you to take good time to have enough experience of managing type (2) in cooperation with your IT staff. The cooperation of IT staff is essential in managing server computers.

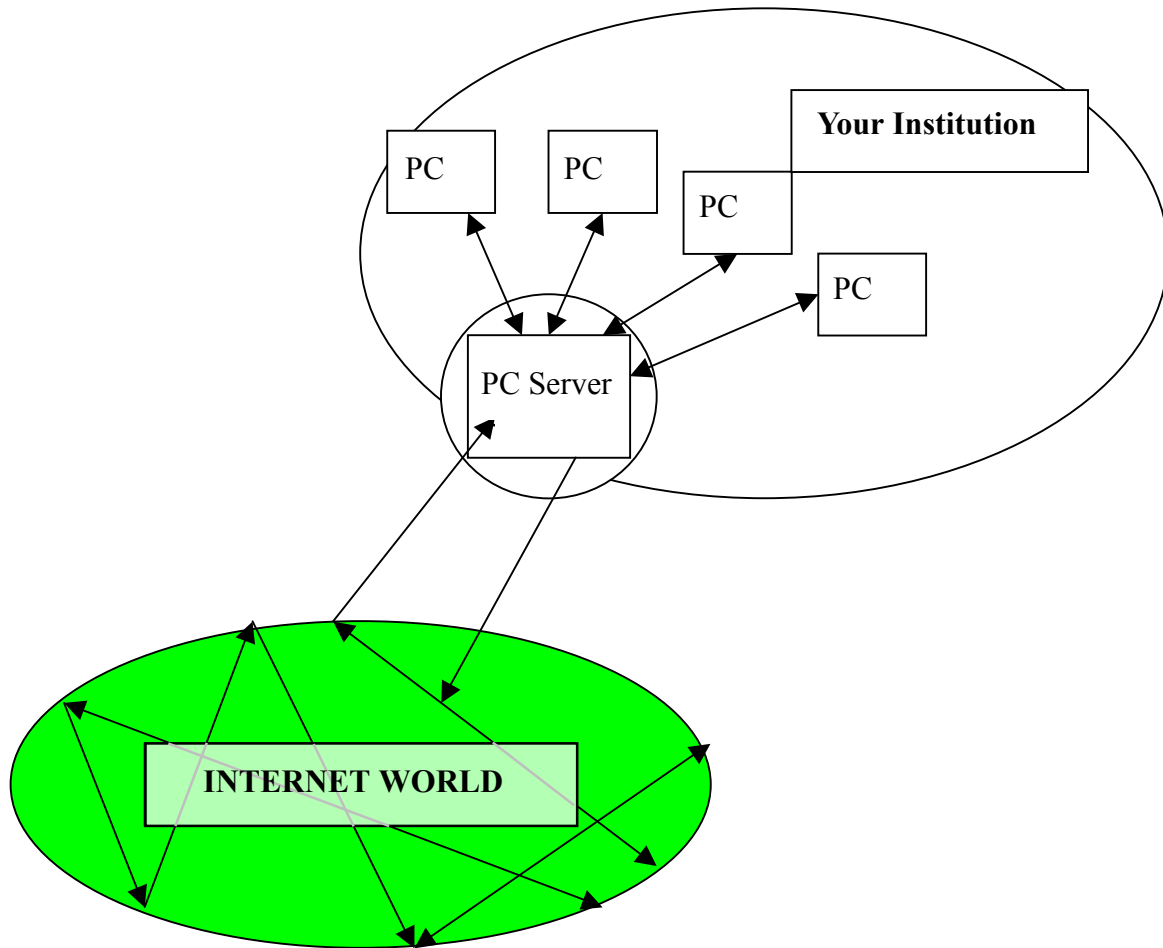


Figure 1. Internet server schematic

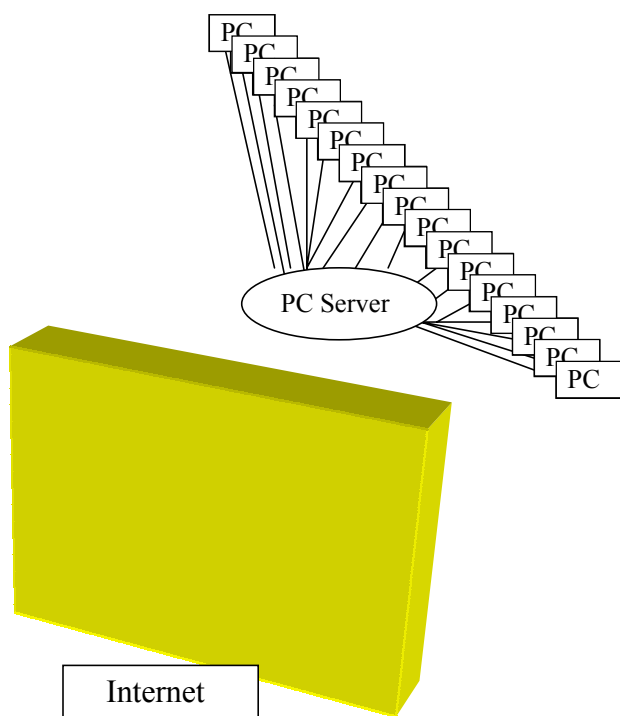


Figure 2. Intranet Example 1

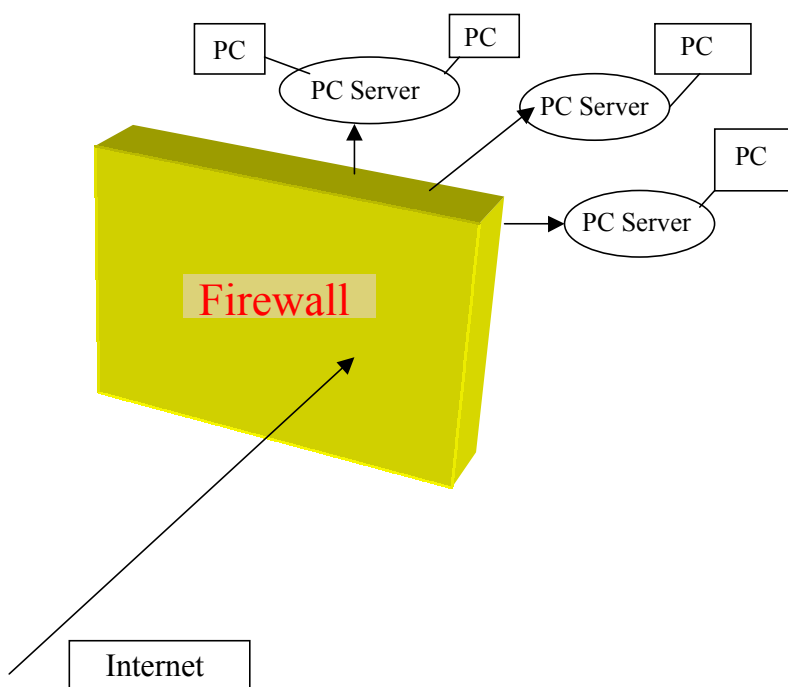


Figure 2. Intranet Example 2

Conclusion – Cooperative work is the keyword of the Internet World

There is no royal road to managing Unix-based servers. You have to read innumerable reference books on computer technology and to get information in the Internet that is a treasure house of the most updated Internet Technology. And the beneficial information is available from many kinds of mailing lists.

The author believes that the most essential thing is to communicate on what you really want to provide in the language classes using network server and PCs with your IT staff or IT-related faculty members and to establish the good relationship, or good human network, with them before operating computer network.

Most of the computer specialists especially managing network security are said to be exclusive in Japan. Do not give up negotiating with them, and take time to explain your ideas on applying computer technology to language education. They are sure to understand your ideas. The author has been making effort to do that for many years and fortunately he has established a good connection to faculty members of computer technology, IT staff and the administrative officers who take charge of the budget. The keyword of the progress of the Internet is cooperation. Everyone believes that the success of the Internet is founded on the cooperative work of the Internet users.

Websites

<http://www.apple.com/quicktime/servers/>

<http://www.linux.org/>

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Practical Report on Written English Communication Training: Using the BBS on the Internet.

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Abstract

For this project “Let’s write in English”, the students were requested to write essays on the BBSs. The project emphasized practicing communication and increasing self-expression ability rather than grammatical accuracy. The students were first given topics and then wrote essays of more than 100 words once a month on the BBSs. They also read other students’ essays, and then, they voted for the most impressive essay in their class, and wrote the reasons for their choice. The results of the voting were announced in the class.

The results of this project showed that the students were able to evaluate other essays fairly well. When they evaluated the other students’ essays they focused not only on the grammatical structure but also on the content of the essays. In addition, a questionnaire at the conclusion of the project indicated that the students have rather positive views of this project.

Purpose of “Let’s Write in English”

What does the Internet Provide for Japanese University Students?

The internet provides students who have not often used English in communicative situations with great opportunities for easily communicating with people from other countries in English. For example, they can express their opinions and know someone else’s ways of thinking when they write and read essays written in English on the BBSs (Bulletin Board Systems). Making use of the Internet is an effective method of language practice for English education aimed at communication in English and intercultural communication.

The Purpose of this Project

We planned a project that we called, “Let’s write in English”, in which the students were requested to write essays on the BBSs. The purposes of this project are as follows:

1. To emphasize practicing communication and increasing self-expression ability, and to not emphasize grammatical accuracy.
2. To provide the students with experience on how to use the BBSs on the Internet.
3. To provide the students with opportunities for reading and evaluating other students’ essays.

As for 1., we put greatest emphasis on practicing communication and increasing self-expression ability, because we have noticed for a long time that our students lack those abilities. In this sense, therefore, these classes can be classified as that of communicative language learning. On the other hand, as indicated in the second objective, the students were trained to use BBS on the Internet in this project. The classes which the students in this project took part in were English classes in the CAL LAB (Computer Assisted Learning LABORatory), and the

objective of those English classes was mainly to increase listening proficiency, but in addition to the main objective, we also expected the students to get accustomed to using computers in this class. The third objective was related with the characteristics of language learning on the Internet. When we use internet, we usually use written language, so we can expect our students to increase their reading and writing proficiency as well as their listening ability.

Method

Subjects and Other Factors

The subjects of this project were 90 freshmen in three classes of the English Department at Nagoya Gakuin University. This project was carried out from October 1999 to January 2000.

For this project, a BBS system for each of these three classes was prepared. The BBSs were specially designed for each class. They were protected by the passwords so that only the students and the teachers in the classes could access the BBSs.

The Procedure for the Project

The procedures for the project were as follows:

1. To learn “netiquette” and how to use a BBS.
2. To practice using a BBS in Japanese.
3. To once a month write essays of more than 100 words in English dealing with certain topics on the BBSs.
4. To read the essays written by the other students on the BBSs in the first two weeks of the month.
5. To vote for the most impressive essays in each class, and write in English the reasons for the choices in more than 50 words.
6. The results of the voting were announced in the classes.

As for 1. and 2., these steps can be called “preparation periods”. For almost all of the students in this project, this is the first time that they used the Internet, including e-mail and a BBS, so intensively. Therefore, some preparations were essential for them to use the tools smoothly in this project.

Procedures 3. to 6. were “the main part” in this research projects. First of all, in 3., the students were given topics and wrote essays of more than 100 words once a month. They could write the essays on the BBS directly or they could write them with word processor software, including MS-WORD, or a text editor, including Hidemaru, and copy and paste the essays on BBS. Of course, they could write their essays at home with their own computers, save it on a floppy disk and bring it to school.

The students could read other students’ essays as they wrote their own. In 4., they almost automatically had opportunities for reading the other students’ essays and this enabled them to see what expressions the other students used in their essays and to get ideas about how to organize their essays.

In 5., they voted for the most impressive essay in their class and wrote the reasons for their choice. In other words, they evaluated the other students’ essays and ranked them. Their votes were counted and, in 6., the results of the voting were announced in the class.

The results showed that the students were able to evaluate the essays fairly well, in that they chose well written essays. Moreover, the students sometimes chose essays which included an interesting story. This indicates

that when they evaluated the other students' essays they paid attention not only to the grammatical structure but also to the content of the essays.

Responses by the Teacher to the Essays Written by the Students

We gave brief comments for some of the essays on the BBSs, but we did not strictly correct grammatical mistakes in the essays.

As explained in the 1 and 2 above, the purpose of this project was not to emphasize grammatical correctness but mainly to focus on communication. We did not give them any negative evaluations as long as we could understand what they wanted to write.

An Example of the Voting Results.

The following is an example of the voting results announced to the class. These results were given to the students in the class every month, both in print and on a home page.

The voting results of * class in November.

*****'s essay got 6 points:

I like English so I'd like to study English more. For example, I like American pronunciation I want to speak fluently like a native speaker. It is difficult for me to pronounce correctly. I often try to pronounce but I cannot say well. Next, I'd also like to understand what he or she is saying. For example, when I got on the bus, a man or a woman were talking in English. I tried to understand their talk. But I could understand only one sentence. "I know wa-ha-ha-ha." They spoke very fast. If I can speak fluently and I can understand English, I can enjoy in the conversation.

His supporter's opinions:

I chose Mr. *****'s statement. The reason is that I can't understand what he or she said who looks like an American. I was trying to understand, but I couldn't. And when I speak with native speaker, he said that my pronounce was different. So I am agree with Mr. *****'s opinion, and I chose his statement.

Student Evaluations

Questionnaire (1)

We administered a questionnaire concerning this project at the end of the academic year. We asked the students what they learned through their essay writing experience on the BBSs.

From the items 1. - 9. below, the students could choose more than one answer, except when they chose answer 1. The number in parenthesis shows the number of the students who chose each item.

1. I did not learn anything through the project. (n = 9)
2. I practiced writing English compositions. (n = 26)
3. I learned how to express myself in English. (n = 21)
4. I learned English grammar. (n = 3)
5. I practiced reading English essays. (n = 9)

6. I learned how to use BBSs. (n = 31)
7. I learned how to use the word processing software. (n = 10)
8. I learned how to communicate in written English. (n = 4)
9. Others. (n = 2)

Questionnaire (2)

We also asked them how they felt about the project. They described it as follows:

- I was able to know other students' opinions by reading their essays on the BBSs.
- The project helped us learn how to write English compositions.
- I got used to writing essays in English.
- The project was tough, so I worked very hard.

From what they answered the questionnaire, they seem to have rather positive views of this project. Although they mainly wrote about this project from a writing -skill point of view, this project has other aspects: the affective aspect and the technical aspect. That is, first of all, through writing what they thought, they could express themselves to the other students in, and moreover, they had opportunities for reading other students' essays and evaluating them. Secondly, for the technical aspect, they became accustomed to using the computer and the BBS system through this project.

Development of the Students' Essays.

The Development of the Average Number of Words the Students Used in Their Essays

The figure below shows the development of the average number of words the students used in their essay from October to November 1999.

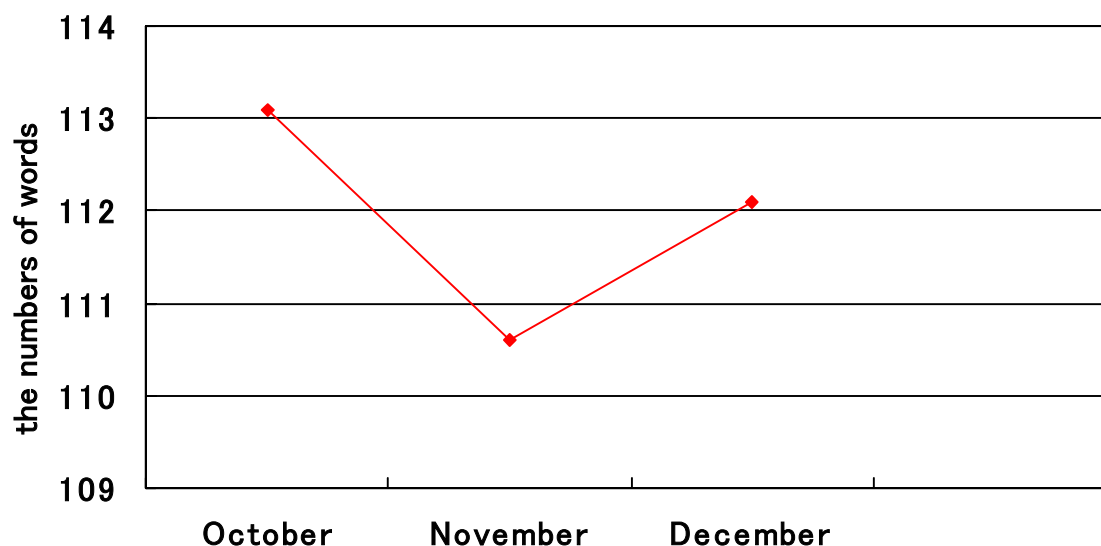


Figure 1. Development of the average number of words the students used in their essays

The figure shows that the average number of words the students used during the three months did not show a difference.

Transition of the Variance of the Number of the Words Used among the Students

The figure below shows a transition of the variance of the numbers of the words used among students. The figures on the y-axis shows variance.

The variance of the number of the words used among the students in December became larger.

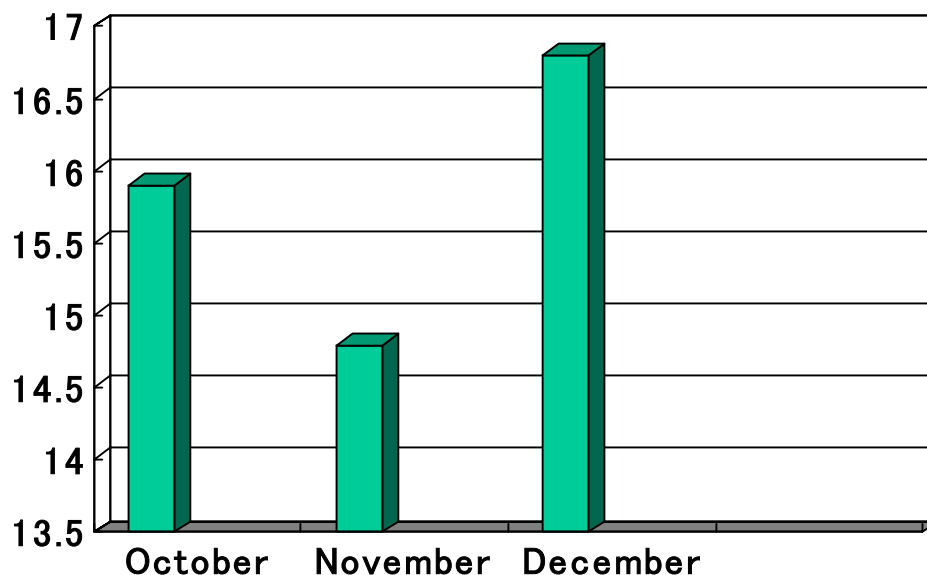


Figure 2. Transition of the variance of the number of the words used among the students

Transition of the Levels of the Words Students Used in their Essays

We also analyzed the levels of the words that students used in their essays and their development from October to December 1999. For this analysis, we used the program named I4an (web edition; <http://www.ngu.ac.jp/~m8205/pls/exe.html>).

Figure 3 shows that fewer words in level 1 and more words in level 2 appeared in December. The words in the other levels did not show a difference. This could indicate that some students began to use more complicated words through this project, though the difference was rather small.

Summary of the Transition of the Students' Essays

From what is shown in the three figures above, the development during this project was rather small.

Some reasons for this can be suggested. First of all, the project last only three months in 1999. This is too short to affect the English proficiency of the students. Therefore, we should look at the effects for a longer period. Secondly, we should look at this project from other points of view. As shown in the questionnaire administered after the project, the students responded positively to the essay-writing assignment. They seemed to enjoy writing their own essays and reading other students' essays, and this alone should make this type of class worthwhile.

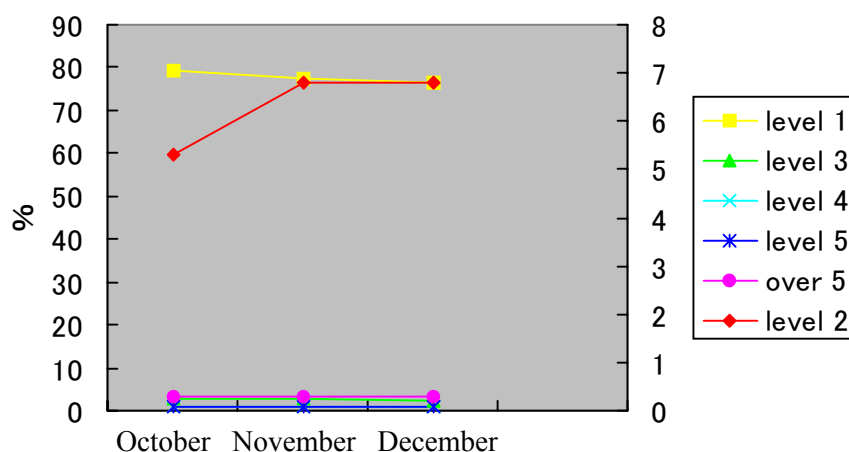


Figure 3. Transitions of the levels of the words Students used in their essays

The Project in 2000

We are continuing this project with 58 freshmen in 2000. Before starting, we revised some parts in the project so that we could facilitate communication between students and expression of their own ideas.

1. Remove restrictions on the number of words used.
2. Allow the exchange of opinions between the students in different classes.
3. Make the topics of the essays more general.
4. Give examples of possible essays before the students begin to write.

As for 2., the students have to write messages on the essays written by pre-selected students in another class. This should give the students chances for reading someone else's essay more intensively and, moreover, to facilitate communication among the students. As for 3., the topics that we used in the project in 1999 were mainly about English learning. However, it seems that the students did not have so much to write about those topics. We, therefore, change the topics of the essays into more general ones so that the students could write more in their essays.

Problems

How to Evaluate the Students' Essays

At present, we check whether each student submits essays and responses or not, but, we have not evaluated the quality of their essays yet. We realize that as long as we continue this project as a part of an assignment in class, we must consider how to evaluate the quality of their essays.

How to Allow the Students to Communicate More Spontaneously

In the project in 2000, the students have to respond to pre-selected students in another class. This should give them chances to communicate in English. However, our final goal is spontaneous communication, and we should take additional steps to achieve this goal.

Whether We Should Ask Native Speakers to Join this Project

At the present, this BBSs system is restricted to the students and teacher, who are all Japanese native speakers. If we include native speakers of English in this project, they can provide models for writing essays. On the other hand, the essays of the native speakers of English could easily dominate this project, and this could cause another problem, that is to say, the students might follow the native-speaker model too closely and may be reluctant to write their essays in their own style. Therefore, at least at the present, we have a rather negative opinion about asking native speakers to join the project.

Notes

A special thanks for Mr. Satoru Yamauchi's technical support of the BBSs.

Proposal of a Writing-Support Tool for Preparation of Research Journal Papers in English

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Abstract

A writing-support framework is proposed to help nonnative English speakers prepare papers for publication in research journals based on corpus linguistics and genre analysis concepts. Such writers need aid at three levels, grammatical, lexical and rhetorical, in order to express their intentions in academic papers. Corpus linguistics can offer the means with which to identify word and phrase patterns frequently used in professional discourse communities, and genre analysis can help reveal the grammatical and rhetorical patterns via move analysis. The framework proposed is being used with graduate school students in science and engineering departments. Student work and responses to such a course are introduced.

Introduction

The importance of English to the scientist today is obvious, and publishing research papers in English for the international scientific community is essential in most fields. The need to write on a professional level raises many issues for nonnative English speakers (NNS) at grammatical, lexical, and rhetorical levels. Difficulties arise because these features have characteristics which have been determined by the people who use them, the professionals composing the community of, for example, biologists, chemists, engineers or lawyers. An interesting study by Okamura and Shaw (2000) was conducted to examine appropriateness of language usage at these various levels. They analyzed the writing of a genre text (a transactional letter) by both native English speakers (NS) and NNS in two groups, academic professionals and nonprofessionals. Their findings showed that even NS nonprofessionals had difficulty with genre rhetorical concerns and that NNS professionals had difficulty with the lexical phrases common to the genre.

Studies on professional discourse such as the above indicate the need for help at several levels in the case of novice writers—grammatical, lexical and rhetorical. Here I would like to suggest a way to synthesize tools available from corpus linguistics and genre analysis. Corpus linguistics offers the means for identifying the words, phrases and patterns to best express what is to be said in the milieu of their field of specialty (Johns, 1991a,b; Hadley, 1998). Genre analysis can help reveal the moves, or lexical, grammatical and rhetorical patterns, used to express authors' intentions in an academic paper (Swales, 1990; Bhatia, 1993). Swales (1981, 1985, 1990) [as described in Bhatia 1993, p. 13], states that genre "is a recognizable communicative event characterized by a set of communicative purpose(s) identified and mutually understood by the members of the professional or academic community in which it regularly occurs. Most often it is highly structured and conventionalized with constraints on allowable contributions in terms of their intent, positioning, form and functional value. These constraints, however, are often exploited by the expert members of the discourse community to achieve private intentions within the framework of socially recognized purpose(s)." In other words, a professional must have a certain level of expertise in using language in order to actively participate in a discourse community.

This paper proposes a procedure for guiding NNS scientists, in particular novices, in the preparation of a journal paper. It consists of a framework for approaching the writing process, a rhetorical framework showing the

information expected in different sections of the text, and ideas for building a bank of lexical items frequently used for each section in the writer's field of study.

Class procedure and student work

The procedure introduced has been used at several graduate school departments with students majoring in various engineering and bioscience fields. The classes have been offered as intensive courses covering a period of as short as two days to as long as one week and also as a year-long class. The number of students have ranged from about 10 to 15 in the year-long class to about 20 to 40 in the intensive classes. At the beginning of the course, an introductory lecture is given on the corpus linguistics and genre analysis techniques used in order to enable the students to understand the procedures and use them as tools. The course itself is conducted in an interactive style using consciousness-raising activities such as suggested by Willis and Willis (1996). Rather than the instructor prescribing forms and features of language usage, the students are encouraged to observe and analyze the language they need to use, classify its features, hypothesize about its usage, and use corpus tools and other reference materials.

As a specific example of the lesson plans for the actual writing of the paper, the procedure for the abstract section will be described in detail here. This section is very important for several reasons: it is required for almost all research papers, an English abstract is often required even if the paper is written in Japanese, and the abstract can appear separate from the paper itself via abstracting services. This means that the abstract must clearly and accurately present the most important information concerning the study described in the paper.

To begin work on the abstract section, the students are asked to bring examples of abstracts from the papers they are presently reading for their research. They are asked to analyze these abstracts by trying to identify what the author wishes to express in the different sentences. This usually results in the abstract being divided into several sections with different purposes, as shown below.

Table 1. Identifying Sections in an Abstract

Section		Features
Abstract		Usually about 100 to 250 words
Background	abs1	One to two sentences; often with present tense verb; often omitted in engineering papers
Aim of study/paper	abs2	One to two sentences; with present tense or past tense verb
Study procedure	abs3	Materials and methods used; usually with past tense verb
Results	abs4	Main results, findings; often with past tense verb
Conclusion	abs5	Conclusion resulting from study; often with present tense verb

The students are asked to send the instructor via e-mail examples of sentences for each section so that the examples can be shared with other students in the class. Table 2 is an example of a table prepared to identify moves for the first sentence of the abstract. Bold and italic fonts highlight phrases which might be useful for the students.

Table 2. Moves for the First Sentence of an Abstract

Student	Verb		Example
A	abs1	M	<i>The adhesion behavior that governs many technologically and biologically relevant polymer properties can be investigated by ZZZ measurements</i> with varied electrolyte concentration or pH.
B	abs1	M	Polymer particles with controlled morphologies and having diameters from about 1-20 fÊcan be prepared using a new SSS procedure.
C	abs2	Past	<i>A new fermentation system</i> with continus separation of inhibitory metabolites by cross-flow filtration <i>was employed for</i> high-concentration cultivation of homo-fermentative latic acid bacteria in order to improve the productivity of cell-mass.
D	abs2	Pres	<i>In this work, we present the results from</i> direct numerical simulations of the....
E	abs2	Pres	<i>In this paper</i> , the impact to toughness properties of XXX composites <i>is presented and discussed</i> .
F	abs2	Pres	<i>The influence of the incorporation of</i> a functional monomer on core-shell polymers of SSS and on their mechanical properties <i>is investigated</i> .
G	abs2	Past	AAA copolymer (ASR), <i>was used as</i> a polymeric emulsifier in the emulsion polymerization of styrene and methyl methacrylate.
H	abs4	Past	Micron-sized PPCC particles <i>were produced as follows</i> :

As can be seen from the above table, four of the eight samples express aim in the first sentence, with the present tense verb being used in three of the examples. Two of the examples start with general background information. This ratio differs among different science fields; e.g., in the biosciences, the first sentence is often a background statement in the present tense, such as the following:

PPP is a single-protein enzyme and uses a simple substance as an energy donor.

Vacuolar CCC antiporter contributes to the CCC accumulation into vacuoles together with AAA.

TTT, a well-known protein phosphatase inhibitor, exists in two forms.

Next, the students are asked to analyze their own abstracts which they are writing and send them to the instructor via e-mail.

Table 3. Samples of Self-Analysis of Abstracts

Student	Verb		Example
StA	abs1	Pres	Fatty acid methyl esters which are produced by methanolysis of plant oils (triblycerides) are expected as biodiesel fuel which can be used instead of petro diesel fuel.
StB	abs1	Past	We noticed he cloud point of nonionic emulsifier and produced original PPP particles by emulsion copolymerizations at above and below the could point.
StC	abs2	Past	We researched a selective hydrogenation of acetophenone by Zr supported catalyst.

Table 3. Samples of Self-Analysis of Abstracts (Cont'd)

Student	Verb	Example
StD abs2,3	Past	Micron-sized, monodispersed, polystyrene (PS)/poly(n-butyl methacrylate) (PBMA) composite particles, in which PS domain(s) dispersed in PBMA continous phase, were produced by seeded polymerization for the dispersions of n-butyl methacrylate (BMA)-swollen PS particles (PS/BMA = 1/150, w/w) using various amounts of benzoyl peroxide (BPO) as an indicator.
StE abs5, 3	Past	Micron-sized monodispersed polymer particles having a rugby ball like-shape were produced effectively at the completion of seeded polymerization for the sipersion of PPP particles prepared in an ethanol/water medium by utilizing the dynamic swelling method under optimum ratios of divinylbenzene/ vinylvphenyl/xylene.

As can be seen, there are many errors at not only the lexical and grammatical level but also at the rhetorical level. Next, the students are asked to compare their abstract sentences with those from the reference papers. Student StE had only one sentence in his abstract and had tried to include all the information in it. The suggestion was made to separate the information into at least two sentences. Here are some examples of how the students revised their sentences. Problems still remain at the lexical level, but there has been improvement at the grammatical and rhetorical levels. For example, StB's statement is now more suitable for the research paper register and StD has reduced the amount of information in his sentence.

Table 4. Examples of Revised Sentences

Student	Verb	Example
StA abs1	Pres	Fatty acid methyl esters which are produced by methanolysis of plant oils (triblycerides) are used as biodiesel fuel which can be used instead of diesel fuel.
StB abs1	M	The cloud point of onionic emulsifier is important in emulsion polymerization because usually emulsion polymerization can not carry out at above the cloud point.
StC abs2	Past	We studied a selective hydrogenation of acetophenone by Zr supported catalyst.
StD abs5	Past	Micron-sized, monodispersed, polystyrene (PS)/poly(n-butyl methacrylate) (PBMA) composite particiles, in which PS domain(s) dispersed in PBMA continous phase, were produced by seeded polymerization for the dispersions of n-butyl methacrylate (BMA)-swollen PS particles (PS/BMA = 1/150, w/w).

The next step would be to present commonly used phrases and expressions for the various sections of the abstract and have the students find expressions that they might want to use for their paper.

Here are examples of how some students revised their papers. Below is the first version submitted by one student. It was composed of the following two sentences.

Table 5. Example of Student A's Abstract—Before Revision

1	abs1	This paper reports the highly cross-linked polymers in supercriticalCO2 was demonstrated that under certain specific conditions, relativey uniform, nonporous poly(divinylbipheny)(PDVBP) microspheres(ca. 100 nm diameter) can be generated in the absence of stabilizers.
2	abs2	The effect of cross-linedratio was investigated.

After the student turned in the following revised version, parts of the text were underlined to suggest how the text might be revised further.

Table 6. Example of Student A's Abstract—After Revision

1	abs2	This paper reports the highly cross-linked polymers in supercriticalCO ₂ was demonstrated that under certain specific conditions, relativey uniform, nonporous poly(divinylbiphenyl)(PDVBP) microspheres(ca. 100 nm diameter) can be generated in the absence of stabilizers.
2	abs2	The effect of cross-linkedratio [<i>sic.</i>] was investigated.
3	abs4	It was shown that the particle size and particle size distribution were strongly dependent on the cross-linker ratio.
4	abs5	Finally this method were extended to the synthesis of functional cross-linked microspheres.

This is the next revision which is almost ready for submission for publication.

Table 7. Example of Student A's Abstract—Almost Publication Ready

1	abs1	This paper reports the synthesis of highly cross-linked polymers in supercritical CO ₂ .
2	abs5	It was demonstrated that under certain specific conditions, relatively unifrom, nonporous poly(divinylbiphenyl) (PDVBP) microspheres(ca. 100 nm diameter) can be generated in the absence of added stabilizers.
3	abs2	The effect of cross-linker ratio was investigated.
4	abs3	It was shown that the particle size and particle size distribution were strongly dependent on the cross-linker ratio.
5	abs5	Finally, this method was estended to the synthesis of functional cross-linked microspheres.

Student StE who had only one long sentence for the first draft of his abstract, submitted the following revision after examining the reference paper corpus. Although further work is needed, the following abstract is much easier to read and understand than the first version.

Table 8. Example of Student B's Abstract—After One Revision

1	abs1,3	Recently, the authors report that micron-sized, monodispersed, anomalous polymer particles having a red blood corpuscle-shape were effectively produced by seeded polymerization for the dispersion of (toluene/divinylbenzene/vinyltoluene)-swollen PS particles prepared by utilizing the dynamic swelling method. .
2	abs2	In order to produce more anomalous polymer particles and to contorol chaging [<i>sic.</i>] the shape, the composition of monomers was chaged [<i>sic.</i>] in above method.
3	abs4	To chage the composition of monomers, the micron-sized, monodispersed, more anolmalous polymer particles having a rugby ball like-shape were effectiely produced in above mthod.

This procedure of collection of target language samples, analysis of their features, followed by student

production of their own writing then doing guided rewriting is repeated until all sections of the research paper have been covered and the students have completed their paper.

Student Questionnaire Responses

The course described above is still in session and therefore the student responses presented below are from those enrolled in a week-long intensive course held earlier. The students were asked to respond to a free-answer questionnaire on the interactive workshop-style course and the course materials. Here are some responses. The first question asked whether or not the students found the course useful, and all responses obtained (25/26) were positive with 19 (73%) specifically stating that learning about the structure of the research paper was useful, two stating that this information would even be useful for reading journal papers, and four giving positive comments about the classroom activities. The second question on the interactive workshop style, which has not been common in Japanese classes, was also very positively received with 18 (69%) students stating that they thought it was effective and enjoyable to work with others and share information. Other comments included wanting more English to be used in the class and more time between classes. For the third question on the course materials, 15 students (58%) responded positively, with one mentioning that they would even be useful for the writing of Japanese papers. One student found the exercises too difficult and another said there was nothing from his field of research, while still another acknowledged the fact that it would not be possible to offer examples from all fields. Overall, the students received the course very well and several expressed the wish to take the course again (several students have done this).

Conclusion

This paper has described a writing-support framework for nonnative English speaker writing research papers for journal publication. (The entire framework is presented in a book to be published in fall 2000.) The student work examples show that activities to raise student consciousness about language and encouraging them to interact with others and their own materials can be very effective for the teaching of writing. This is supported by the positive responses from the students. This approach of having students observe, analyze, and hypothesize about the language that they need, then work with writing and revising their own material is recommended for the training of scientists who must publish in English to have their work recognized.

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A Proposal to Integrate Computers in Language Instruction

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Abstract

The purpose of this paper is to demonstrate a lesson plan focusing on how and where we can use and integrate the use of computers in language instruction. Computers are used at different stages of language instruction both in and outside of the classroom. Adapting a commercially available university-level English reading textbook, the authors developed digital slides for classroom discussion and a CALL program with extra language activities for self-study. While making the best use of already existing teaching materials, computerized activities can add new dimensions to conventional language teaching and make the teaching material more comprehensible. A sample unit is discussed in detail.

Introduction

As increasing numbers of computers have been installed in Japanese universities, educators and practitioners are vigorously searching for effective ways to use the new technology in education. Needless to say, language teachers are also struggling to find the most appropriate use of computers in their instruction, and software development has been explored at all levels. With this in mind, the purposes of this study are (a) to describe how classes will change by using computers as an educational aid and (b) to demonstrate a sample lesson with the digital materials we have produced integrated in a whole lesson plan.

The Educational Design

The Flow of a Lesson

A lesson plan was made to complete a chapter of the target reading textbook, with the idea of utilizing computers in and outside the class. As shown in Figure 1, the plan was to cover the whole chapter in three class sessions.

The first session is an introduction to the main topics of the lesson, with multimedia materials as visual and audio aids. The second session is a self-learning lesson, with a student using a CALL program, in which they can process and practice linguistic information related to the text, such as pronunciation, meanings of words and sentences, cultural information relevant to the contents, and comprehension quizzes. The third session consists of regular classroom activities, on which the plan puts the most emphasis. The lesson plan is especially designed to promote the students' active participation during communicative classroom activities following the CALL lesson.

From Teacher-Centered to Student-Centered

During our two years of research, we developed a hypothesis which states that when the goal of the class is to improve students' communication abilities with the help of a teacher, who is not a lecturer but a facilitator, the goal will be realized if computers successfully meet the following two requirements (Suzuki & Fujieda, 1999). The first requirement is that the computer activities are designed to supplement and enrich already existing teaching

materials. The second requirement is that computers compensate for a lack of more varied and individualized learning experiences. Using the CALL program, students are able to work at their own speeds and chose the order of subjects or exercises they are working on according to their individual preferences.

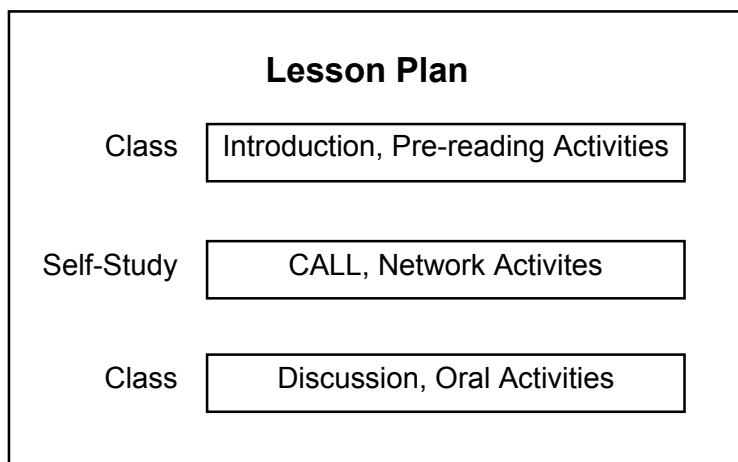


Figure 1. The flow of the lesson

In order to describe the effective use of computers in class which this study demonstrates, the process of using media in the class is reviewed (see Figure 2). Previously in the traditional classes teachers used written textbooks and a blackboard on which they wrote some key words or phrases. Such lecture-style classes forced students to sit for a long time and passively listen to what teachers were saying. The most important role of the teachers was to deliver linguistic knowledge to the students. Then in the next age of language education, teachers were able to use tapes and videos. Such educational aids helped students to receive more visual and audio information, which promoted their comprehension of the lectures. Furthermore, the tapes and videos gave the students a chance to perform oral exercises, such as practicing pronunciation, listening and speaking. However, since cassette tapes and video materials presented information in a fixed, linear form, they tended to limit students' learning strategies and processes.

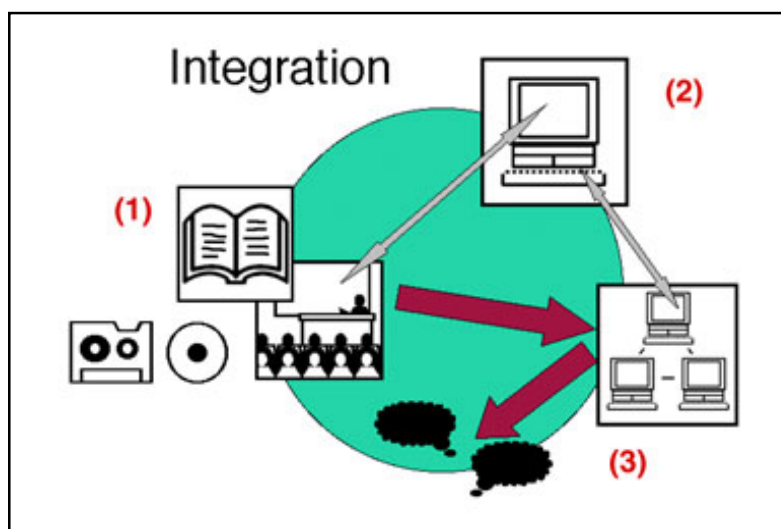


Figure 2. The development of instruction media

Now is the age of computers in language education. In our view, computers may be most effectively used as (a) visual and audio aids relevant to the contents of lectures, which use the capabilities of multimedia in combining

images, sounds, and timing, thereby increasing listening comprehension among students, (b) a computer-based multimedia self-learning program (CALL), which presents material in a more attractive and interactive way, and gives students substantially more flexibility in employing learning strategies and (c) as a communication tool, when e-mail or video conferencing systems are available, whereby students acquire experience in sharing information, problems or feelings. These three computer roles optimize students' exposure to English, which most effectively leads to improved student performance in communicative activities following CALL.

A Sample Unit

The Material

An experimental sample unit of computer-based multimedia materials was produced according to this lesson plan. The unit is based on a chapter of a university-level ESL reading textbook. A passage in the chosen chapter depicts in chronological order the history of rock 'n' roll in the U.S. from the days of slavery to the present.

Contents of the Unit

Introduction of the Chapter: In the first session, pre-reading activities can be conducted to introduce the chapter using a digital slide show made with Microsoft PowerPoint. For example, showing pictures of the famous singers and playing songs mentioned in the text can create a small discussion on each singer (see Figure 3). New words and phrases are also introduced on the screen along with pictures, when available (see Figure 4). A simple task such as completing a table of rock 'n' roll history is given to the class to scan key points of the story (see Figure 5).

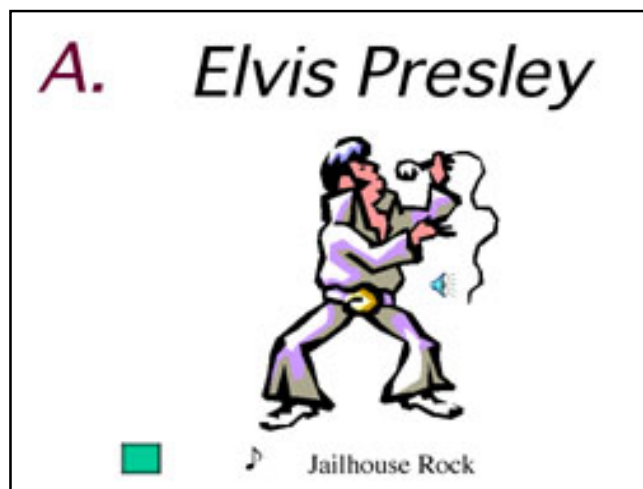


Figure 3



Figure 4

The advantages of using computers are that the materials can be prepared and saved in a file beforehand, correct answers, comments or key words necessary for tasks and discussions can be typed and immediately shown on a big screen, which serves as an electronic blackboard, and each object can be presented attractively with colors and animations as well as sounds. If a classroom is equipped only with a small LCD projector and a screen, a teacher can walk in with a laptop computer and start such a digital presentation.

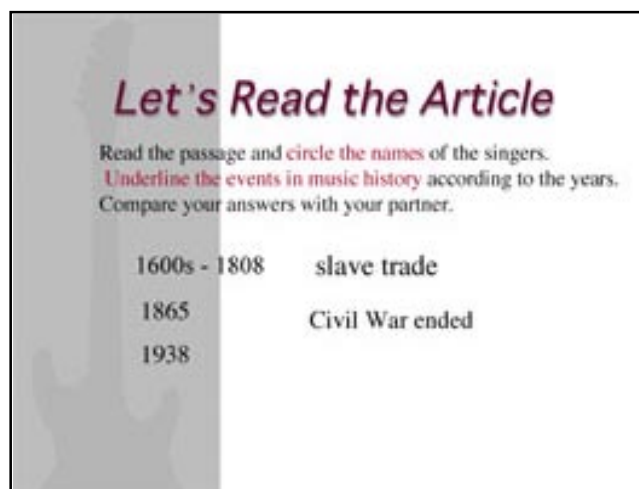


Figure 5

The CALL Program: The CALL material was developed to support students' self-study and help them prepare for the next classroom session. As shown in Figure 6, the main menu has four main sections: reading, listening, quizzes and culture. Other items are supplementary sections which are used for network-based activities incorporated into the program.

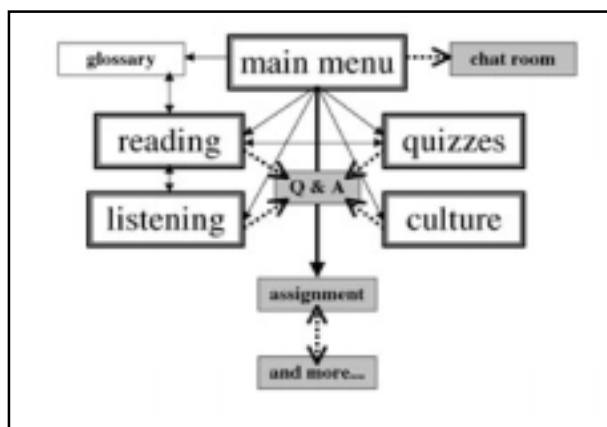


Figure 6. The structure of the CALL program

First, the reading section is a comprehensible database of the text. By default, the pop-up vocabulary help items appear when the cursor rolls over a word. Since the goal of reading instruction is to help students become independent readers, this minimal help encourages students to keep on reading without stopping. Where possible, the help information is given in simple English in order to help the students think in English.

The functions of the buttons on the left are: Button E for English sound, Button J for Japanese sound, and Button V for further vocabulary explanation and pronunciation. While the pop-up balloon provides minimal help, the vocabulary help provided by pressing Button V is more extensive, including Japanese explanation about usage. Each help item is linked to a target sentence, so that the student can focus on that particular sentence and get various types of help for it. Button G visually presents sentence structure with animation for some of the longer sentences with complicated structure. The intention of the material developers here is to show the sentence structure in such a way to help students understand it without formal linguistic explanation.

The listening section (Figure 8) corresponds to the reading section. Here, however, only images are shown with English sound. Pressing Button K allows the students to see keywords from the text while listening.



Figure 7. Reading screen



Figure 8. Listening screen



Figure 9. Word puzzle



Figure 10. Timeline

The “quizzes” section has two kinds of tests: Word Puzzle and Timeline. Word Puzzle (Figure 9) is designed to encourage students to use newly learned vocabulary and reinforce spelling. It asks the students to rearrange letters to form a word that fits in a blank in a sentence. The Timeline section (Figure 10) is a reading comprehension quiz which asks students to fill in blanks with keywords and rearrange sentences in chronological order. The purpose of this quiz is to review the story by picking up key words and summarizing the paragraphs.

The CALL program has several extended features. “Glossary” is one of them, where the vocabulary items shown in the main passage are stored in alphabetical order and a word can be looked up by letter or by inputting the word in a search box (see Figure 11). It is possible to search for words in the glossary from every section of the program, so that students can receive information for words that are necessary for doing the quizzes or expressing their own ideas. The “assignments” section provides class handouts and worksheets that students are supposed to complete at home. The handouts and worksheets can be printed out so that the students bring their homework to class. Figure 12 is a sample of a worksheet which requires students to access a web page about a legendary country blues singer. The web page is specified in a section called “and more...” (see Figure 13). “Chat room” (Figure 14) is a bulletin board system where students post their questions and opinions about the topic raised. Students type in their names, e-mail address, the subject and their opinions. In this section, they can share and exchange their problems, ideas and suggestions.



Figure 11. Glossary

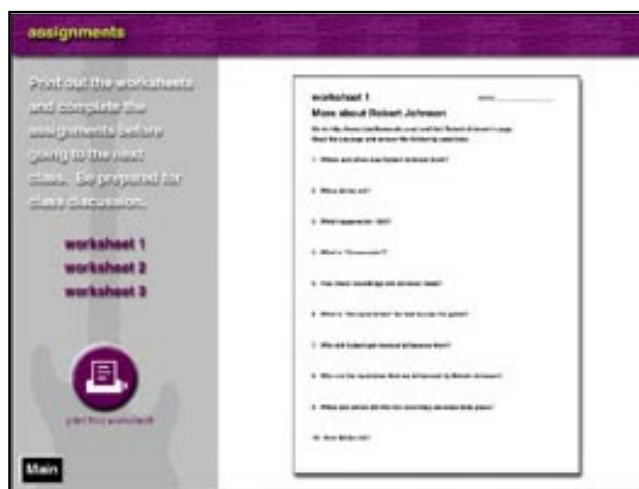


Figure 12. Assignments



Figure 13. And more



Figure 14. Chat rooms

Post-CALL Oral Activities: After self-learning in the CALL lesson and working on the worksheet in the assignment section, students are ready to participate in oral activities in the regular class. In this chapter, students investigate information about the musicians, exchange their information in class in small groups and discuss in groups to make decisions on the task given to them, which is referred to as a “mission”.

[Mission]

You are a music producer.

Your project team is going to remake a song.

Choose a song in the 90s. Your plan is to remake that song with a singer from the 60s.

Decide a song and a singer and describe how you remake that song according to the image of the singer.

Explain why you choose the song, the singer and the music style.

Here are some things to keep in mind when you carry out the project.

1. Points to consider
2. Music genre
3. Arrangement of the song
4. Target audience
5. Costume

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Prosodic Variables as a Cue for Japanese EFL Learners' Listening Comprehension

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Abstract

The research described here is concerned with the effect of the prosodic variables on Japanese EFL learners' listening comprehension. To observe the learners listening skill without presenting any kinds of written choices and to keep the differences of their background knowledge effect as small as possible, the word-association test was chosen in this study. With this test, the listeners listen to English passages whose meaning suggest one English word.

Experiment 1 and 2 were administered to examine to what extent the prosodic cues were meaningful to Japanese EFL learners, especially when they listened to slowly-read passages and fast-read passages. The results show that prosodic variables do not have special effects on EFL learners' listening comprehension when the speech is spoken slowly, but when the speech is spoken fast, prosodic variables can be a cue for learners to process the incoming sequence of words.

Introduction

Speakers make some effort to let the listeners understand what they say. When the speakers find that the listeners show some difficulty in understanding what they say, they can change the difficult words into simple ones and rephrase what they said. They can also try to make it easier without changing the words or phrases. They can put longer and more pauses and divide their speech into prosodic phrases, marking the ending clearly with lengthening, attaching the prominence of information focus a little emphatically, making the pitch move up and down in some non-random way, and pronouncing segments or syllables with high quality sound. They can also slow down their speech to make it more intelligible.

It is usually admitted that the slow speech is for beginners and fast speech is for advanced learners in foreign language learning. The tempo itself, however, does not always improve the comprehension of sentences. Slower speech gives the listeners more time to process the incoming sentences than the fast speech, which is sometimes rattled off like a machine gun. In this case, besides the amount of the time for processing the speech, the pauses, especially the grammatical speech pauses that are usually put more often in slower speech than faster speech help the listeners comprehend the speech. The frequency of pauses in speech goes along with speaking rate as is described by Nooteboom (1997):

Actual speakers assume considerable freedom in choosing whether phrase boundaries are or are not realized by speech pauses. They are more liable to make speech pauses in slow and careful speech than in rapid and less careful speech. Whenever they make a melodically marked speech pause, however, it is likely to be made at a predictable phrase boundary (p. 672).

He also points out that the grammatical speech pauses can be helpful to maintain intelligibility under unfavorable listening conditions or speech quality.

High quality speech without grammatical speech pauses within sentences can be highly intelligible and acceptable. But as soon as speech quality is less than normal, or speech is listened to in noisy conditions, the introduction of grammatical speech pauses can help to maintain intelligibility. In general, it can be observed that the contributions of prosody to speech perception become more important when the segmental quality of speech or the listening conditions become less favorable (p. 672-3)..

The contribution of prosody to speech comprehension for EFL learners who try to understand the speech under unfavorable conditions and also sometimes with the insufficient language skills is also great. Fujimura and Erickson (1997, p.112) says that prosodic cues seem primarily important for very early phases of language acquisition, and also for second language learning.

The pauses and also other prosodic variables, such as final-lengthening, accent, and pitch movement help the speech to be intelligible for listeners, and these prosodic variables, not always but sometimes, go along with the change of speaking rate (Tomita, 1995b; 1997). The acoustic phonological studies have shown the effect of these prosodic variables on listening comprehension, such as pauses (Suzuki, 1998, Tomita, 1995a), length of the pause-bounded unit (Baum, et al., 1997; Lamberts, 1998; Sanderman, 1997) and prefinal lengthening (Swerts, 1993). Fujimura and Erickson (1997) point out that the importance of these prosodic variables for parsing and comprehending speech utterances.

Temporal modulation such as phrase final elongation, a gradual declination of articulatory excursions as well as voice intensity over a phrasal unit, and various f0 changes near the end of a phrase provide important perceptual and spectrographic cues for parsing and comprehending speech utterances.... It should be emphasized that perceptually clear phrase boundaries are not necessarily marked phonetically as silent periods. Phonetic phrase boundaries are not consistently used according to the phonological phrase structures. The strength of each phonetic phrase boundary is continuously, rather than categorically controlled (p. 112).

The research described here is concerned with the effect of the prosodic variables, such as final-lengthening, accent, and pitch movement on Japanese EFL learners' listening comprehension. The pauses are removed from the experimental stimuli of this study, for the focus is on the effect of the prosodic variables. When the speakers speak with a different speaking rate, the frequency and length of pauses and the degree of final-lengthening, pitch movement, intensity and segmental quality of speech change interactively. When we observe the effect of speaking rate on EFL learners' listening comprehension as one factor, we do not make it clear whether they may benefit from pauses, prosodic variables or segmental quality in comprehending English passages. Of course they may benefit from all of them, and especially from the pauses, as the previous studies show. The research here uses the fast and slow speech whose segmental quality is the same and also whose pauses are all eliminated to investigate the role of the prosodic variables on the comprehension of the passages.

We introduce the word-association listening test as an objective way to observe the EFL learners' comprehension skills of English passage in Section 2. The listening experiment explored whether prosodic cues have listening comprehension import with the slowly-read passages in Section 3 and the fast-read passages in Section 4. General discussion for future study is presented in Section 5.

Word Association Listening Test

This study uses the word association test to measure the Japanese EFL learners' listening comprehension skills. There are various methods that have been used to measure the passage-level listening comprehension but there are none whose validity, reliability and practicality are generally acknowledged. The development of computer technology has heightened the practicality of question and answer with multiple choices, but there are still problems with reliability and validity. The presentation of the different types of choices (written sentence, spoken sentence or picture), affects the results. The content of the passage also affects the result of the listening compre-

hension test. Any kind of the passage needs background knowledge to comprehend its content. In observing the results of the listening test, we do not know whether the amount of the background knowledge affected the results or not.

To observe the learners listening skill without presenting any kinds of written choices and to keep the difference of their background knowledge effect as least as possible, if possible, on independent grounds (i.e. independent of background knowledge), the word-association test was chosen in this study. With this test, the listeners listen to English passage whose meaning suggests one English word. We can choose basic words to associate with and make the plain explanation passage to test the beginners. For advanced learners, we choose difficult words to associate with and make a high-level explanation passage. This way has the potential of creating many kinds of explanation passages.

In this study, experiments were carried out with the passages chosen from MELIS¹, which has ten volumes with eight lessons each. In all, it has around 1,600 questions, from which 42 fairly easy questions were selected, as the standard level of the questions in MELIS was relatively high for the subjects who participated the experiment. The 12 key passages used in the experiment are shown in Appendix 1. The words which are associated with these 12 questions are, “left”, “blue”, “sky”, “bat”, “red”, “nine”, “please”, “guest”, “film”, “cold”, “teacher” and “blue”. They are all very basic words and do not cause any difficulty to associate once the listeners can comprehend the questions sufficiently.

Experiment 1

Purpose

The experiment was administered to examine to what extent the prosodic cues were meaningful to Japanese EFL learners, especially when they listened to slow-readings.

Method

Subjects. Thirty-three Japanese EFL learners participated in the Experiment 1. Their major was humanities.

Material. Forty-two passages, 12 for key passages, four for examples and 26 for distractors (refer to Appendix 2), were selected for the experiment. All the passages were recorded with normal falling vs. rising pitches and at a slow speaking rate (stimulus SP), that was around 140 wpm. The 12 key passages were also recorded with monotonous intonation (stimulus SM). All the pauses in key passages were removed using MultiSpeech (Ver. 3.), which made the articulation rate of the passages from 171 wpm to 232 wpm. To make the articulation rate of paired passages (passages with many prosodic cues and monotonous ones with fewer prosodic cues) same, the length of paired passages was compared and a minute adjustment was made by means of TSM (Time-scale modification) (Ver. 2.5) developed by Matsushita Electric Co. Ltd. The length of the each passage and rate of the time-scale modification are shown in Table 1.

The 24 stimuli (12 passages x 2 prosodic styles) were divided into two tests. Each test had 12 stimuli (stimuli 1 x 12) and the order of presentation was from stimuli 1 to 12. The two prosodic styles of stimuli were mixed (six SPs and six SMs) and they were put between the stimuli of distractors (D1 x D26) to avert the learning effect of two tests. The order of the presentation of the passages in the two tests is shown in Table 2.

Table 1. TSM Rate for SP and SM

Passage	SP		SM	
	Length [ms]	TSM Rate	Length [ms]	TSM Rate
1	5768	0.82	5023	0.95
2	8143	0.90	7751	0.95
3	10447	0.94	10348	0.95
4	11835	0.94	11752	0.95
5	9717	0.95	1009	0.91
6	11392	0.88	1056	0.95
7	12715	0.86	1163	0.95
8	8937	0.94	8934	0.95
9	8875	0.89	8378	0.95
10	11270	0.89	10650	0.95
11	10680	0.90	10230	0.95
12	13452	0.87	12439	0.95

Table 2. Order of Presentation of the Passages

- Test 1: D1 • SP1 • D2 • SM2 • D3 • SM3 • D4 • SP4 • D5 • SP5 • D6 • SM6 • D7 S • M7 • D8 • SP8 • D9 • SP9 • D10 • SM10 • D11 • SM11 • D12 • SP12 • D13
- Test 2: D14 • SM1 • D15 • SP2 • D16 • SP3 • D17 • SM4 • D18 • SM5 • D19 • SP6 • D20 • SP 7 • D21 • SM8 • D22 • SM 9 • D23 • SP10 • D24 • SP11 • D25 • SM12 • D26

Ten second pauses were inserted between each stimulus for response (thinking and writing the answer).

Procedure. The experiment was carried out for each subject in a quiet room. The subject sat in front of DAT player (PIONEER: Digital Audio Tape Recorder, D-C 88) and put on the earphone. The experimenter, sitting on the opposite side, asked him/her to listen to each stimulus and to associate its meaning with one English word. After four examples, they listened to 25 stimuli and wrote down responses. Test 2 was carried out with the same style. Test 1 and test 2 were carried out with the interval of at least one week to avoid both the learning effect and exhaust effect. The total time for one test for one subject was approximately 40 minutes.

Scoring. One point was given to each correct response. The number of the subjects in each test was 33 and the number of stimuli in each prosodic style was 12, the maximum score for SP and SM were 396, respectively.

Results

Table 3 displays the mean score and standard deviation for the two different prosodic styles of listening word association tests.

Table 3. Mean and SD for Two Different Prosodic Styles of Listening Word Association Test

	Listening Word Association Test Scores	
	M	SD
SP	7.3	2.5
SM	6.9	2.8

N = 33 Maximum score: 12

The total score of SP was 243 and that of SM was 229. The result did not show the significant difference between the scores of SP and those of SM ($F(1, 64) = 0.40, p < .05$).

Experiment 2

Purpose

The experiment was administered to examine to what extent the prosodic cues was meaningful to Japanese EFL learners, especially when they listened to fast-read passages.

Method

Subjects Thirty-three Japanese EFL learners participated in the Experiment 2. Their major was humanities.

Material The set of the passages used in Experiment 1 was used. The articulation rate of the twelve key passages was speeded up by means of TSM, which made the articulation rate of the passages from 278 wpm to 350 wpm. The rate of the time-scale modification was mainly 0.6. To make the speaking rate of paired passages (stimulus FP and stimulus FM) same, the length of paired passages was compared and a minute adjustment was made. The length of the each passage and rate of the time-scale modification are shown in Table 4.

Table 4. TSM rate for FP and FM

Passage	FP		FM	
	Length[ms]	TSM Rate	Length [ms]	TSM Rate
1	5768	0.52	5023	0.60
2	8143	0.57	7751	0.60
3	10447	0.59	10348	0.60
4	11835	0.59	11752	0.60
5	9717	0.60	1009	0.57
6	11392	0.55	1056	0.60
7	12715	0.54	1163	0.60
8	8937	0.59	8934	0.60
9	8875	0.56	8378	0.60
10	11270	0.56	10650	0.60
11	10680	0.57	10230	0.60
12	13452	0.55	12439	0.60

The 24 stimuli (12 passages x 2 prosodic styles) were divided into two tests. Each test had 12 stimuli (stimuli 1 x 12) and the order of presentation was from stimuli 1 to 12. The two prosodic styles of stimuli were mixed (six FPs and six FMs), and they were put between the stimuli of distractors (D1 x D26) to avoid the learning effect of two tests. The order of the presentation of the passages in the two tests is shown in Table 5.

Table 5. Order of Presentation of the Passages

Test 1: D1 · FP1 · D2 · FM2 · D3 · FM3 · D4 · FP4 · D5 · FP5 · D6 · FP6 · D7 · FM7 · D8 · FP8 · D9 · FP9 · D10 · FM10 · D11 · FM11 · D12 · FP12 · D13
Test 2: D14 · FM1 · D15 · FP2 · D16 · FP3 · D17 · FM4 · D18 · FM5 · D19 · FP6 · D20 · FP 7 · D21 · FM8 · D22 · FM9 · D23 · FP10 · D24 · FP11 · D25 · FM12 · D26

Procedure. Tests were carried out with the same style of Experiment 1. To avoid the learning effect of the previous experiment, the tests were carried out after six months from Experiment 1. The two tests were carried out with the interval of at least one week to avoid both the learning effect and exhaust effect. The total time for the one test for one subject was approximately 40 minutes.

Scoring. One point was given to each correct response. The number of the subjects in each test was 33 and the number of stimuli in each prosodic styles was 12, the maximum score for FP and FM were 396, respectively.

Results. Table 6 displays the mean score and standard deviation for the two different prosodic styles of listening word association tests.

Table 6. Mean and SD for Two Different Prosodic Styles of Listening Word Association Test

	Listening Word Association Test Scores	
	MS	SD
FP	5.5	2.4
FM	4.0	2.3

N = 33 Maximum score: 12

The total score of FP was 182 and that of FM was 133. The total scores of correct answers were significantly frequent in FP ($F(1, 64) = 6.3, p < .05$).

Prosodic cues had some effect on listening comprehension in a foreign language. Especially when the learners listened to very fast reading, the prosodic cues played an important role, and when they listened to monotonous reading, the speaking rate had a great effect on their comprehension.

General Discussion

The results of the experiment 1 did not show a significant difference between the scores of the listening test of the readings with many prosodic variables and those of ones with fewer prosodic variables. The results of the experiment 2 showed a significant difference between the scores of the listening test of the readings with many prosodic variables and those of ones with less prosodic variables. These results tell that Japanese EFL learners can benefit from the prosodic variables to comprehend the meaning of the fast readings. Prosodic variables do not have special effect on EFL learners' listening comprehension when the speech is spoken slowly, but when the speech is spoken fast, prosodic variables can be a cue for learners to process the incoming sequence of words. The prosodic cues may help the learners to find the boundary of the phrases especially when they listen to a very fast speech. The present study showed the effectiveness of the prosodic variables on the comprehension of the fast speech. Then the mechanism by which they help the EFL learners to comprehend the fast speech must be clarified in future studies.

Notes

1. MELIS is English cassette tape for advanced learners. It has around 1,600 questions. Fairly easy 45 questions were selected on the basis of the data in English lessons.

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The Prospects and Issues in Integrating a CALL Methodology into the English Curriculum of Korean Elementary Schools

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Abstract

Since the Korean Ministry of Education introduced the teaching of English to the elementary school's curriculum in 1997, we have been witnessing a rather dramatic change in the ways foreign languages are taught in grade school classrooms. The Korean Government has set their plan to equip every classroom with a set of multimedia facilities through which teachers can teach English and other subjects. Every school will not only be equipped with one or two 40 seat self-access labs, but also be electronically wired with the Government managed educational website for self-accessing web-based materials nationwide and with the other schools for sharing CALL materials developed by teachers across the nation. This hardware provision and the construction of self-access labs in every school are expected to be completed by the end of year 2000. The Korean government has subsequently developed a series of CD-ROM titles for a regular curriculum of elementary school English (3rd – 6th grade), which will be used in class, starting from March of 2001. This paper briefly sketches the overall plan for multimedia-assisted English teaching/learning in a Korean context as to its infrastructure and CD-ROM title development as an integral part of the national elementary English curriculum. The paper will show the flow chart of 4th grade's CD-ROM titles for teacher's and students' use and discuss design and learning features in each. The paper concludes that MALL-based English education is very promising, but does require the integrated MALL curriculum for effective delivery of instruction.

Introduction

During the closing years of the 20th century we saw the appearance of a digital revolution that is transforming the way in which the world socializes and does business (Gates, 1997, Hanson-Smith, 1999). This is a so-called digital revolution which will change everything we do in our daily lives—home, business, and education. Digital revolution has transformed the multimedia elements such as text, sound, video, animation, graphics, and other elements into the single digits of 0 and 1. Thus, we can send the information packed with these multimedia elements to the person at the other end of the globe at the speed of the light. Gates predicted that digital revolution would have its greatest impact on education in the 21st century. It is then possible to adduce that foreign language education can be best improved by using the new computer medium which lies at the heart of the emerging information technology.

Computer-assisted language learning has dramatically changed, following the footsteps of theory and practice of language learning and teaching. In the 50s people had access to the mainframe computer at the university or institutions, which was rather bulky and expensive. During this period language teaching was tied with the theoretical underpinnings of structural linguists. This trend led to the now bygone methods such as grammar translation method, audio-lingual method. In the 80s technology enabled people to own a personal computer at an affordable price. During this period communicative competence became the buzzword of the language teaching profession. In the 90s people began to network the computers, which developed into a new CALL methodology (Warschauer, 2000).

Multimedia-Assisted English Instruction under the 7th National Curriculum in Korean Elementary Schools

Master plan for building up an infrastructure

The Korean government (Blueprint for MALL Education, 1999) has flexed its muscle to build up an infrastructure for technology-assisted instruction in all elementary schools, middle schools, and high schools throughout Korea. Their plan consists of five provisions. First, they will build up one or two computer LAB(s) in over 10,000 schools, consisting of 40 computer hardware and its peripherals. Second, they will equip all classrooms of all schools (around 200,000) with a set of computer facilities consisting of a teacher's console, a TV monitor (32 inches or 43 inches), and networking between these two and to the backbone of the school's network to WWW. Third, they will give one PC set to all teachers (around 330,000). Fourth, they will provide computer training with teachers and develop multimedia contents for instruction in classrooms. Fifth, they have begun to integrate a CALL methodology into a national elementary English curriculum where they developed a series of CD-ROM titles which accompany regular textbooks published by the Ministry of Education (hereafter abbreviated as MOE).

Publication of English textbooks and its integration to a CALL methodology

The Korean government published two kinds of English materials for elementary schools' English education: textbooks and CD-ROM Titles

Publication of English textbooks by the Ministry of Education. MOE published a textbook for students and a teacher guidebook for teachers. The following table shows the number of weekly class hours and a textbook and teacher's guidebook per grade.

Table 1. Weekly Hours and Textbook Development

Grade	Weekly Hours	Textbook	Teacher's Guide
3	2(1)*	8 lessons	250 pages
4	2(1)	8 lessons	250 pages
5	2(2)	16 lessons	250 pages
6	2(2)	16 lessons	250 pages

* Parentheses indicates the number of hours for English instruction in the elementary schools, effective in the calendar year of 2001 and onward.

Korean elementary textbooks have three features. First, 80 ~ 120 words (base words) are used for 3rd grade textbooks, 80~120 words for 4th grade textbooks, whereas 90 ~130 words were used for 5th and 6th grade textbooks each. And yet the total number of words should not run over 450. Second, 130 target language expressions in accordance with notional/functional syllabus and situational syllabus combined are used throughout the textbooks. Third, no English letters appear on the textbooks themselves. Students can only look at the pictures on the textbook and listen to the sounds of words and sentences which correspond with pictures they see on the textbook.

Publication of CD-ROM titles accompanying the textbook. MOE published CD-ROM titles for students and the teacher. The following table shows the number of weekly class hours and CD-ROM titles for students and teachers per grade.

Table 2. Weekly Hours and CD-ROM Publication

Grade	Weekly Hours	Textbook and Teacher's Guide	Student Use	Teacher Use
3	2(1)*	8 lessons	650 MB 1	650 MB 1
4	2(1)	8 lessons	650 MB 1	650 MB 1
5	2(2)	16 lessons	650 MB 1	650 MB 2
6	2(2)	16 lessons	650 MB 1	650 MB 2

* Parentheses indicates the number of hours for English instruction in the elementary schools, effective in the calendar year of 2001 and onward.

CD-ROM titles have several features. First, no English letters appear on the CD-ROM title. Thus, students can only listen to the sounds, looking at the pictures or scenes. They contain video clips, animated scenes, songs, chants, and storytelling of fairy tales.

Korean Government's Infrastructure Provision for Internet Access by Schools. The electronic networking to every Korean school will be established by the end of 2000. Free internet access (1,462,000 won monthly fee at the speed of 256 Kbps) will be provided by the Korean government to 10,1165 schools nationwide, whereas schools who use the speed of 512 Kbps (2,002,300 monthly fee) or of 2 Mbps (4,698,000 won monthly fee) will be given a special discount rate (2-8%) on a monthly charge. Moreover, starting from 2001, the Internet access at the speed of 512 Kbps will also be given for free. The Korean Government will also provide 50,000 students of low income families with free Internet access for the next 5 years. By the end of April of 2000 the number of internet users in Korea has reached just over 14 million people. The number of IP domain users will be about some 300 thousand by the end of 2000.

A Content Analysis of the 4th Grade CD-ROM Titles

Elementary CD-ROM titles consist of two versions: one for the teacher's use, and another for students' use.

Flow chart of a 4th grade teacher's CD-ROM title

The CD-ROM titles for 4th grade teachers is schematized in the flow chart shown in Figure 1, consisting of Main Menu and Lesson Menu.

Design Features of the Main Menu. The Main Menu consists of Lesson Title, Hourly Lesson Unit, Preparatory Lesson, and Dictionary, as shown in [Fig. 3]. Teachers can click the Lesson Title (number 1-8) and choose the lesson they wish to study. The number 1-4 which appear horizontally under each lesson chosen indicates the order of hourly lesson unit (1-4). Preparatory Lesson is a readiness program which 4th grade students are recommended to study before taking the main lesson. Students can point to, touch, and draw the objects by the commands which they get by clicking the object presented on the screen. Dictionary menu lists 450 words in picture, which are used throughout the entire lessons. Teachers can listen to the pronunciation of the words, looking at the picture of them.

Functions of Buttons. There are 5 function buttons: Blackout, Silent, Pause, Before and After. The Blackout Button is used to listen to the sound without video. One can enter anywhere he/she wants to study by clicking the mouse on the dark scene. The Silent Button is used to show the scene without sounds. One can listen to the sound by clicking the mouse once. The Pause Button is used to pause the CD-ROM title where nothing is heard or

shown. The Before Button is used to go back to the previous lesson. The After Button is used to go forward to the next lesson.

Learning Features of Lesson Menu. Each Lesson consists of four hourly units, each of which is broken down into 2 or 3 teaching plans, as shown in [Diagram 3]. The first hourly unit consists of Look/Listen, the second hourly unit's Look/Listen, Listen/Repeat, and Chants, the third hourly unit's Sing-Along, Read, and Activities, the fourth hourly unit of Role-play, Review 1 (listening), and Review 2 (speaking).

Look and Listen:: A teacher can play three pairs of conversational rejoinders out of two animated dialogues or full dialogues and ask students a couple of questions as a prelistening activity. The dialogues in the second hourly unit are a little more complex than those in the second hourly unit.

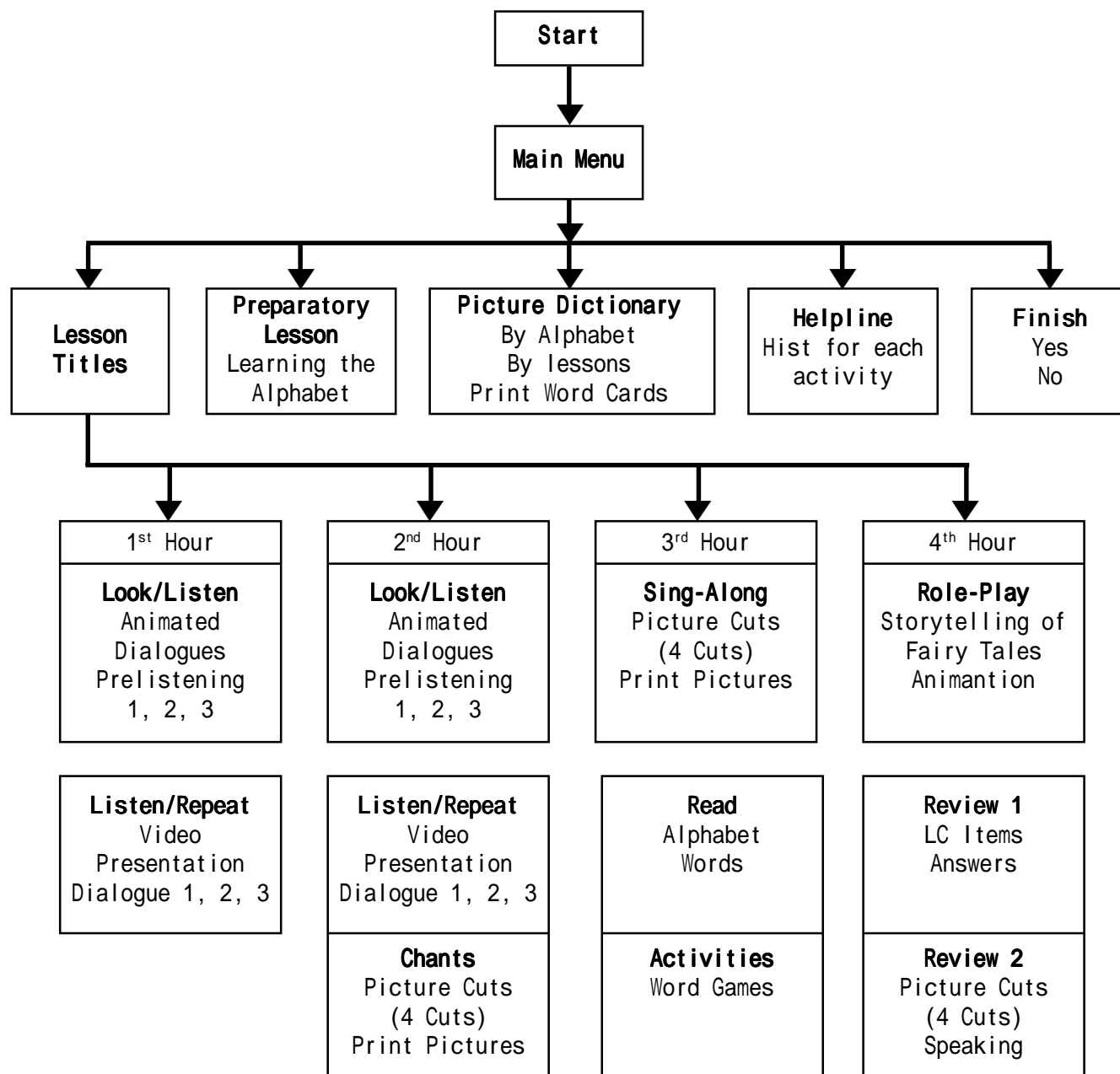


Figure 1. Flow chart of CD-ROM Titles for 4th grade students

The site map shows the layouts of all lessons and links with the lesson which the learner can choose to study.



Figure 2. Site map of 4th grade teachers' CD-ROM title



Figure 3. Main menu of 4th grade teachers' CD-ROM title

Listen and Repeat: The teacher can play two video scenes containing the major expressions of each lesson. Students can repeat the voice of the speaker they select on the screen menu. The dialogues in the second hourly unit are a little more complex than those in the second hourly unit.

Chants: Chants are presented in animation with three picture cuts. Each picture cut gets animated at the tune of the melody.

Songs: Songs which recycle the major expressions of each lesson are presented in animation with four picture cuts. Each picture cut gets animated at the tune of the song.

Read: The teacher teach the alphabet and words to students through playing various games. The CD-ROM title for 3rd grade does not have this learning feature, since the learning of the alphabet and words begin only in 4th grade in the elementary English curriculum.

Activities: Students can listen to the expression and match its corresponding picture with what they listen to.

Role-play: The teacher can play the animated storytelling of the Korean traditional fairly tales and have students record their voice and replay it.

Review 1 (listening): The teacher can test how well students do with listening items which they have studied during the lesson.

Review 2 (speaking): The teacher can ask students to make up a dialogue looking at the pictures given. He/She can play full or partial dialogues for students' checking the answer.

Flow chart of CD-ROM for 4th grade student's use

The CD-ROM titles for 4th grade students' use are schematized in the following flow chart, consisting of Main Menu and Lesson Menu.

Design Features of Main Menu. The Main Menu, as shown in [Fig. 4], consists of Lesson Selection (1 through 8 hidden), Dice Game, Music Box, Dictionary, Helpline, and Finish. Students can find the number (1 through 8) hidden on the background by moving the cursor to the object displayed and enter the lesson which they want to study by clicking it. In Dice Game, students can play games learning words or sentences. In Music Box students can store up to five songs or chants from the lesson menu and replay them as they wish. The Dictionary lists the same picture words as the ones shown on the CD-ROM for Teacher's use. Helpline includes tips for all activities.

Each lesson consists of the following six learning features:

Look and Listen: Students can listen to two scenes of animated dialogues. Students can listen to the teacher's Korean explanations on the dialogue by clicking the Teacher Icon. The dialogues in the second hourly unit are a little more complex than those in the second hourly unit.

Role-play: Students can record their voice and replay it, while listening to the animated storytelling of Korean traditional fairly tales.

Chants: Chants are presented in animation with three picture cuts. Each picture cut gets animated at the tune of the melody.

Songs: Songs which recycle the major expressions of each lesson are presented in animation with four picture cuts. Each picture cut gets animated at the tune of the song.

Activities: Students can listen to the expression and match its corresponding picture with what they listen to.

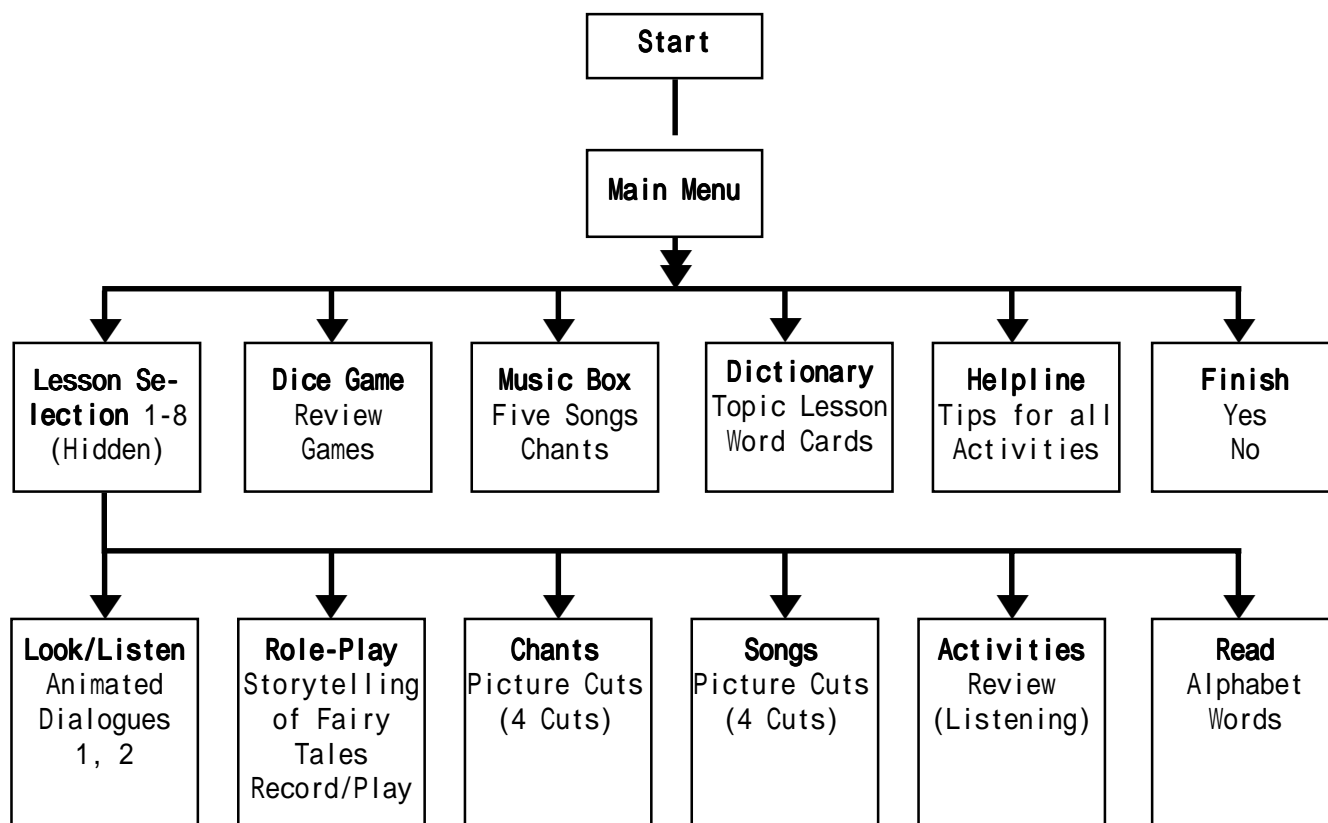


Figure 4. Flow chart for 4th grade students' CD-ROM titles

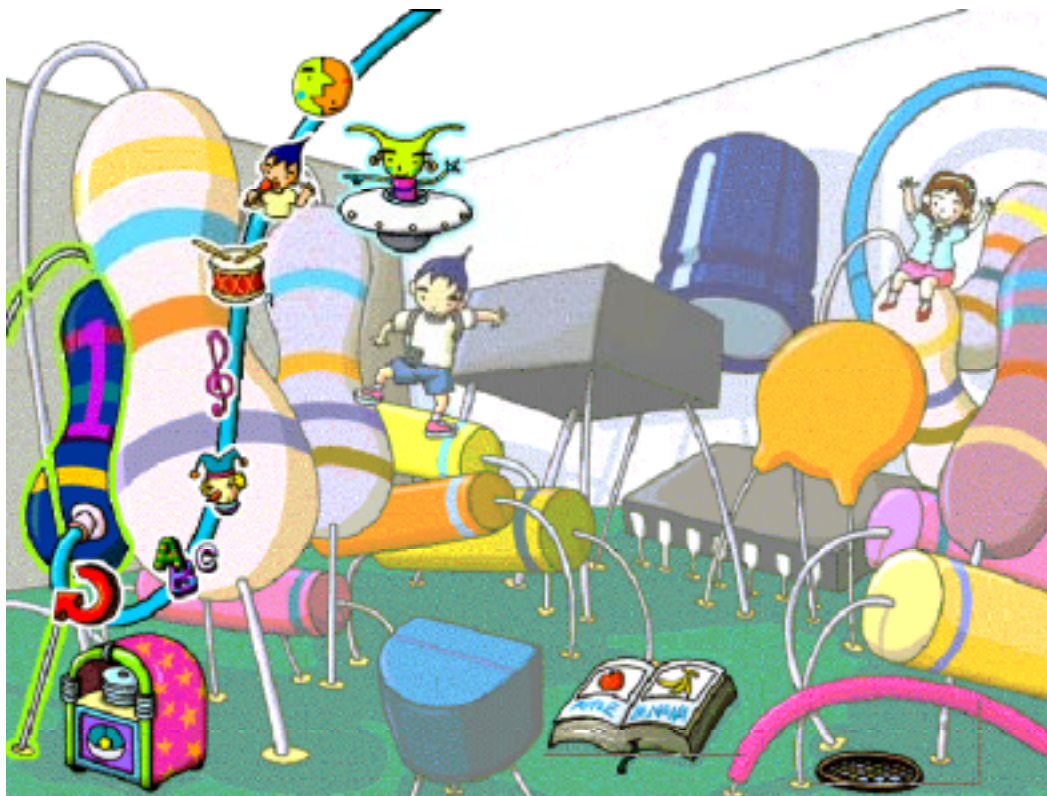


Figure 5. Main menu of 4th grade students' CD-ROM title

Read: Students can learn alphabets and words through playing various games. The CD-ROM title for 3rd grades does not have this learning feature, since learning of alphabet and words begin only in 4th grade in the elementary English curriculum.

Conclusion

This paper briefly sketched the overall plan for multimedia-assisted English teaching/learning in a Korean context as to its infrastructure and CD-ROM title development as an integral part of the national elementary English curriculum. Despite all these preparations which have drawn much attention among countries where English is taught as a foreign language, Korean classrooms in grade school still face several potential problems. First, MALL-based English education can be successful only with teacher's basic knowledge of CALL/MALL methodology and hands-on-experience teaching English through a computer medium. However, a MALL training program for Korean teachers is not fully developed yet, due to its being a relatively new discipline which is beginning to reshape the theoretical underpinnings of modern foreign language education. Second, MALL methodology should be fully integrated to the elementary English curriculum to the extent that teachers can combine their classroom teaching with students' self-training of English either at the school's multimedia lab or at home. Although each school is being equipped with 40 seat computer labs (one or two), it is not likely that students can be given enough space to self-train English at their school's multimedia LAB since this lab will primarily serve the purpose of general computer training in the beginning.

In conclusion, multimedia-based English education affords us much promise, but whether we can have this promise materialize or not depends on whether we can make our classroom environments ready for this type of new medium of instruction (Kim, 2000).

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The Prospects of Computer-Assisted English Teaching in Japanese Elementary Schools

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Introduction

Eight years have passed since the experiments toward the implementation of English teaching in the elementary school curriculum started in 1992 in Osaka under the auspices of the Ministry of Education. The experiments were favorably accepted and conducted nation-wide, and by the end of the spring of 2000, 61 public and two national elementary schools with one junior high school have taken part in this educational adventure.

In due course, the Guideline of Course of Studies was published in 1998, in which the “general studies”, the so-called “Sougoutekina gakushuu-no-jikan” is introduced as a new school subject. And in this subject, four themes such as environmental studies, computer education, health and welfare, and international understanding are suggested to be taught from the 3rd graders up to the 6th graders. Three school periods are allowed per week, and each school can decide to choose any theme or its teaching style according to the circumstances of the school.

Within the theme of international understanding, elementary schools can give opportunities to include activities in English. This does not mean, however, to teach English as a target, but just to give children a chance of enjoyable experiences to use the language, singing songs in English, playing games, and taking part in various fun activities. This guideline is going to be implemented in 2002, and many schools are trying to get ready to start this new subject, “general studies” classes.

Although various experiments toward the implementation of English teaching in the public elementary school curriculum have been conducted all over Japan, the goal of this English instruction and the methodologies to be applied are not clear, and many teachers are trying hard to find ways to solve this problem.

What Children will Learn in the “General Studies” Class

It has become evident that children, especially the younger children of 1st to 4th graders, enjoy the activities in English and learn the language. Even though we say that we are not going to teach the language, they learn to use it as a tool of communication and actually try quite hard to use the English they have acquired when they meet foreign visitors at schools, in the streets or elsewhere.

They enjoy singing, and eagerly take part in games in English. They also like to listen to stories in English, and sometimes they try to perform a simple plays or skits in English. Children before they become 10 years old are quite willing to imitate English sounds, and show the high ability of reproduce the language.

As to the vocabulary they have, there are a huge amount of borrowed words from English that are used in Japanese, and using these foreign words in the conversation in question and answer activities, children can manage to communicate with teachers and their peers. They have proved to have their high ability to learn the language.

According to the research I made on the children's vocabulary, at the age of 9, they are able to understand more than 1,000 words found in their daily lives, and thus try to use them as much as possible.

Through short and easy conversational interaction or games and songs, they are familiarized with English sound system such as rhythm and intonation. When they try to answer in English, their expression becomes very natural, though it is inevitable for them to make some errors in their English.

Who is to Teach in Elementary Schools

Though English is about to be introduced into nearly 24,000 schools in Japan, we have a serious problem of recruiting enough teachers of English to manage the classes. The pilot schools have started their English lessons with ALT's/ AET's, (assistant language teachers/ assistant English teachers) and JET's (Japanese teachers of English) and HT (homeroom teachers). Therefore, three teachers in a class of about 30 students enabled the English teaching quite successful, and the students had good chances to try the expressions they are learning on those teachers.

But most of the schools that are trying to introduce activities in English in their curriculum are facing the difficulty of getting teachers of the target language regularly except once a month or even a term. So the homeroom teachers with very little training of teaching English are now trying hard to get the teaching techniques to handle the class as well as to obtain teaching materials.

Especially it is not so simple to find a methodology that works for all six grades of the elementary level. The teaching techniques and the primary curriculum for junior high schools are only for three years, and since the learners are much older, their attitudes and mentality are quite different. Consequently we cannot adopt the same methodology used in junior high schools, but have to find a new one that suits to elementary school children.

To train and prepare the homeroom teachers to obtain these skills is the urgent task. Local education boards and some private sectors are planning training courses to offer them opportunities to brush up their skills in English and learn teaching techniques. From 2001 on, more local education boards and training centers as well as Ministry of Education will provide workshops and seminars for teachers.

Computer-Mediated Instruction

Among the four themes of the "general studies", or the so-called "Sougoutekina gakushuu-no-jikan", education on information technology will be much emphasized in elementary education. The Japanese Government has made a plan to set up 42 computers with access to the Internet in each elementary school by the year 2001. And all the teachers are supposed to take part in training courses on information technology.

There are possibilities for computer-mediated instruction to play an important role in teaching English to children as well as pre and in-service teacher training. The children who have already had the opportunity of using this modern tool for learning have shown a great interest in it and have been observed to learn a great deal from this modern technological system.

More teaching materials such as CD-ROM's for computer-assisted instruction have been developed, and children are learning English with much fun through this media. They also have chances to exchange mails with children abroad on the machine, which enables them to make friends in foreign countries and become aware of what is happening in the world. This is a good start for international understanding.

In April, 2000, the National Broadcasting Corporation (NHK) has started an educational TV program for English teaching aimed for elementary school aged children, which accompanies a website. This 15-minute program, titled "Eigorian", has been developed as a series of 20 units for the year 2000, and it is broadcast in the morning of the weekdays, so teachers can use it in their English lesson at school. This is quite a new experiment and so far has very eagerly been accepted by schools.

Most of the scenes are comical and laughable, and the language used in them are easy enough for children to understand. The main target of the program is to encourage children to listen to natural English and enjoy watching what is going on the TV screen. Children are not expected to repeat or to memorize the language they hear.

The website is consisted of two parts, one is for children and the other for teachers and parents. The children can access to the site and watch the replay of the program, and also they can enjoy playing games, while they listen to English and review the expressions they have learned. The pages for teachers give them ideas for lesson plans and some advice of how to conduct their lesson.

We expect a good result from this undertaking and also hope this will provide positive influence on the implementation of English teaching in the early stages of learning. NHK is planning to continue the program for the year 2001 in a similar concept to encourage elementary school teachers to give a good start for their English teaching.

Distance learning, or a lesson using TV system, is another thing introduced in the field of English teaching. The system is not yet good enough to send a clear picture or sound of good quality, so it is not very easy for teachers to give lessons in this way. But, as I experienced in a rural area in Kansai district, the children, who were waiting in the school some kilometers away from where I was, got so excited to play games in English and sing songs in English. After the lesson, the teachers reported to me that the children had become motivated to learn English and to use computers to play with CD-ROMs.

Closing

It is obvious that the world has been enclosed with a net of modern technology, and our children need to have a skill to communicate with children who use a language different from Japanese. And children themselves know that English will be a tool to assist them for the purpose and are quite eager to learn the language. Of course, teaching English to children is not an easy task, but a rewarding one for sure.

Making good use of modern technology of electronics, we can change the situation of our educational environment, and enrich the content of English teaching, so that children, when they become in their 30's and 40's, will become good communicators of the global community.

Raising Students' Textual/Pragmatic Awareness Using Online Resources

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Abstract

This paper is an attempt to show some ways in which to utilize online resources to enhance Japanese students' awareness of textual and pragmatic features of the English language. Actually those properties are something that the students have virtually little or no opportunities to be made aware of in EFL classrooms in Japan, partly because of a deeply-rooted tradition of doggedly pursuing the grammar-translation method that still holds powerful sway across the country. It will be shown that online exercises using network resources can serve as an effective as well as convenient way to make learners aware of the different ways in which English texts are formed on the one hand, and to let them get used to guessing at conversational implicatures that lie behind given messages on the other.

Aim

The aim of this paper is to offer a range of strategies by which teachers may attempt to improve their students' awareness of, on the one hand, the textual features peculiar to English prose, and, on the other, of the pragmatic processes that are necessary for understanding how meaning is actually conveyed in another tongue, i.e. English in this case. I intend to argue that:

1. These two aspects are something we have long neglected in EFL in Japan, and
2. These abilities may be best nurtured by using online resources in the form of after-school (or even around-the-clock) activities.

In spite of the recent trend in EFL education in Japan towards more communicative approaches to language teaching¹, a deeply-rooted tradition of doggedly pursuing the grammar-translation method still holds powerful sway. As a result, in their eagerness to arrive at item-by-item exact translation, students try to establish (even against the obvious dictates of reason) a simple, one-to-one equivalence between English lexical items and their Japanese counterparts. And what is the result?

Our students are left with no notion of looking to make out whatever a given text may imply, by applying appropriate strategies in order to derive from that text whatever inferences it may offer. Moreover, our students' practice of simply matching individual English vocabulary item with the nearest they can identify within the lexicon of their own language, a practice in which they have, alas, been thoroughly trained, appears to lead them to entertain a second misconception: that Japanese and English texts must be constructed in identical ways. And this is a preconception that, for instance, impedes students' capacity to correctly identify the referents for many of the pronouns, and again, hyponyms, that they encounter in English discourse.

What further exacerbates this pedagogical problem is the fact that students now themselves largely identify language-acquisition as solely a matter of development of conversational skills. By pointing out this apparent fact, I by no means intend to belittle those pedagogical approaches that further, through classroom activities, our students' aural-oral proficiency. To the contrary, I firmly believe that is something we should all prioritize in our language-teaching curricula.

But let us pause here, to ask whether speaking is the only aspect, of their involvement with their target-language that deserves serious attention. And if we can agree that students need to be able to read, quite as much as to be able to talk, then, whichever is our pedagogic target, we have to be wary of their so firmly inculcated bias towards word-for-word translation. For that approach to second-language acquisition must be least likely to lead our students towards any appreciation of the influence of context upon the interpretation of any given vocabulary item. In that they themselves have unfortunately acquired these items without any appreciation of how they may be used in different contexts, how can we hope that they may engage with them communicatively successfully, whether they use them, read them, or hear them?

Here we also have to take into account a trivial yet nagging economic problem: for university students are extremely unwilling to purchase those more expensive textbooks that might make such a difference to their target language – affording them rich self-study activities, if only they would consent to invest in such resources, and then use them. And it is my conviction that cost-free resources must therefore be found.

The Teaching of Reading

My principal subject here is the teaching of reading. And when we speak of a reader's textual competence, in the case of Japanese learners of English, this must refer to our students' awareness of the rhetorical differences between texts written in Japanese and those written in English; and especially in terms of the differences in how cohesion operates in these two languages.²

Obviously, any text written in English is generated according to one particular set of grammatical rules, which differ entirely from the rules by which the foundation of any text written in Japanese is governed. An instance of this may be found in the way that, while English rules require, in dealing with nominalized concepts that have to be restated, both careful pronominalizations and elegant substitutions, the rules for Japanese allow both repetition of the same item and also zero-form. This is a difference in rhetorical practice that students must be gently aware of; because, as long as they are left unaware of this, they will apply the assumptions suggested by the practices of their native languages, to not only their interpretation of their target language, but also their production of the same.

Much interested by these issues, I devised a limited experiment, by which it might be determined to just what extent different rhetorical patterns controlled the respondents' responses to texts in English (Yamamoto 1994). This experiment involved approximately 200 Japanese student subjects. Half of these were given oral presentation of texts written according to accepted Anglophone rhetoric: i.e. using as much elegant substitutions and as many pronominal forms as was feasible. The other half had to deal with texts written using both the repetitions and the zero-forms common in Japanese. And both groups were required to identify the referents of certain noun-phrases.³ (For details of the test and its result, see the Appendix.)

0According to the data derived from this experiment, Japanese students appeared to find it more difficult to identify correctly the referents in English-style texts, than they did in the Japanese equivalents of these. This indicates that we have to devise some means of helping students to pay more attention to, or become more sensitive to, the ways in which English texts are formed.

Pragmatic Competence

Now, when we turn our attention to students' pragmatic competence in English, it is no exaggeration to say that little, or virtually no, effort has been made, by teachers and therefore their students, to develop in those students this quite essential interpretive skill. This is partly because, for so long, too much emphasis has traditionally been placed on the teaching of lexical and/or grammatical aspects of the language, with the deplorable result of students being effectually misled into supposing that word-for-word translation is the ultimate goal of language

learning. This misguided belief has, in turn, lead to the underestimation of, and consequent and dire lack of training in either reading between the lines of a text, or assessing its implicit meaning.⁴

Thus the time has come for us to shift our attention, from the mere word-by-word translation of the object-text, to an inference-drawing practice — one that is ultimately indispensable to any reasonably competent understanding of a given instance of language use.

Using Online Resources

As one means by which to enhance both students' textual and pragmatic competence — and hopefully both at the same time — I am going to advocate the use of online resources. But first, let us review the advantages that online resources can offer:

1. Students can get access to relevant and authentic materials virtually twenty-four hours a day;
2. Since the input that students obtain from the Internet is authentic, it means they are being exposed to real English, or, to be more precise, real varieties of English, familiarity with which is surely, in this highly globalized age, indisputably indispensable to them;
3. Online resources are practically free of charge, so long as the students are connected to the Internet in one way or another — thus providing their teachers with a happy solution to the annoying problem, mentioned before, of learners not being willing to pay for learning hardware such as expensive textbooks, or audio tapes.

Meanwhile, we should not overlook the difficulties we have to face, in utilizing online resources. And the most serious of these is the problem of copyright restrictions. Fortunately, we have untrammelled access to quite a number of free archives, in both English and Japanese, of literary works the copyright for which clearance has already been obtained. (See Online Platform (1)-a below.) Further, we can direct our students to access a number of sites, each offering very useful material, which may bring students to grasp, through detailed comparison of the versions in two languages, the textual differences of which they so need to be aware.

Also interestingly challenging are the technical problems involved in building a homepage through which to present such materials. Firstly, if the presentation platform is too complicated for students to manipulate, they will easily be discouraged from any further investigation — and therefore any further learning. Again, we need also to be cautious about the ways in which we direct students' attention to the intended message(s) of the object-texts we have them encounter. If appropriate care is not taken, their interest will certainly diminish, or even evaporate entirely, halfway through their investigation of the offered text — with minimal or even zero learning achieved.

A Pilot Study

In a pilot study involving 20 students with access to the Internet, the subjects engaged in online exercises such as those described above. Both before and after the series of online feedback sessions, very informal written tests were administered, in order to be able to compare the students' pre-scores with their post-scores. Although I have to admit that the number of participant subjects is far too small, and, in their present format, the examinations too unsophisticated, to yield really firm conclusions, these slight results would nevertheless appear to record significant changes in the ways in which those subjects looked through particular discourse fragments, in search of both correct referents and also implicit meaning. And it perhaps seems not exceedingly self-congratulatory to conclude that the participant subjects at least started to

1. pay consistent attention to the different ways in which English texts are formed, especially in terms of cohesion, and

2. attempt to guess at conversational implicatures, on the basis of what information the text explicitly provided, aided by accompanying visual clues. (See Online Platform (2) below.)

And yet both practices had, in fact, previously been virtually unknown to those learners.⁵

Notes

1. Obviously, the introduction of Assistant English Teachers (AETs) or communication courses into the secondary education system is one of the typical examples of this trend.
2. See Halliday and Hasan (1976) for the ways in which lexical cohesion is achieved in text.
3. For the purpose at hand, oral presentation seemed more appropriate than visual, given that the latter would have given respondents too much time in which to deliberate upon their responses, thus undermining the basic purpose of the experiment.
4. I have in mind such implicit meanings as conversational implicatures that have been extensively discussed in pragmatic literatures. See Grice (1975), Levinson (1983), Sperber and Wilson (1986) and Blakemore (1992).
5. The subjects were students studying Education Technology in a teacher-training course.

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Appendix A

Sample Texts

English-Style Text

Manuel Elkin Patarollo told reporters he's giving the World Health Organization all legal rights to the malaria vaccine he developed. The Columbian scientist says he declined to give the legal rights to a drug company, even though he would become rich if he had done that. Hundreds of millions of people suffer from malaria every year; about three million of them, mainly children in developing countries, die from the mosquito-borne parasitic disease. The doctor says field trials of his malaria vaccine in Latin America show it protected 77 percent of the children involved. Tests of the vaccine are now planned in Asia and Africa. A World Health Organization malaria expert says the vaccine may not be effective outside Latin America, because there are different malaria strains in different regions....

Japanese-Style Text

A Columbian scientist Manuel Elkin Patarollo told reporters he's giving the World Health Organization all legal rights to the malaria vaccine he developed. Patarollo says he declined to give the legal rights to a drug company, even though he would become rich if he had done that. Every year hundreds of millions of people suffer from malaria, which is a mosquito-borne parasitic disease: about three million of them, many children in developing countries, die from malaria. Patarollo says field trials of his malaria vaccine in Latin America show it protected 77 percent of the children involved. Tests of the vaccine are now planned in Asia and Africa. A World Health Organization malaria expert says the vaccine may not be effective outside Latin America, because there are different malaria strains in different regions....

Patters of Reference

English-Style:

Patarollo he The Columbian scientist The doctor
malaria (malaria) the mosquito-borne parasitic disease

Japanese-style: Patarollo (a scientist) Patarollo Patarollo
malaria malaria (a mosquito-borne parasitic disease)

Identifying Referents

Sample Questions

1. Manuel Elkin Patarollo is a .
 - a. a Columbian scientist
 - b. a WHO malaria expert
 - c. a drug company
2. Malaria is one of the parasitic diseases .
 - a. carried by mosquitoes
 - b. wide-spread mainly in Latin America
 - c. which has few strains.

Table A1. Rates of correct Answers

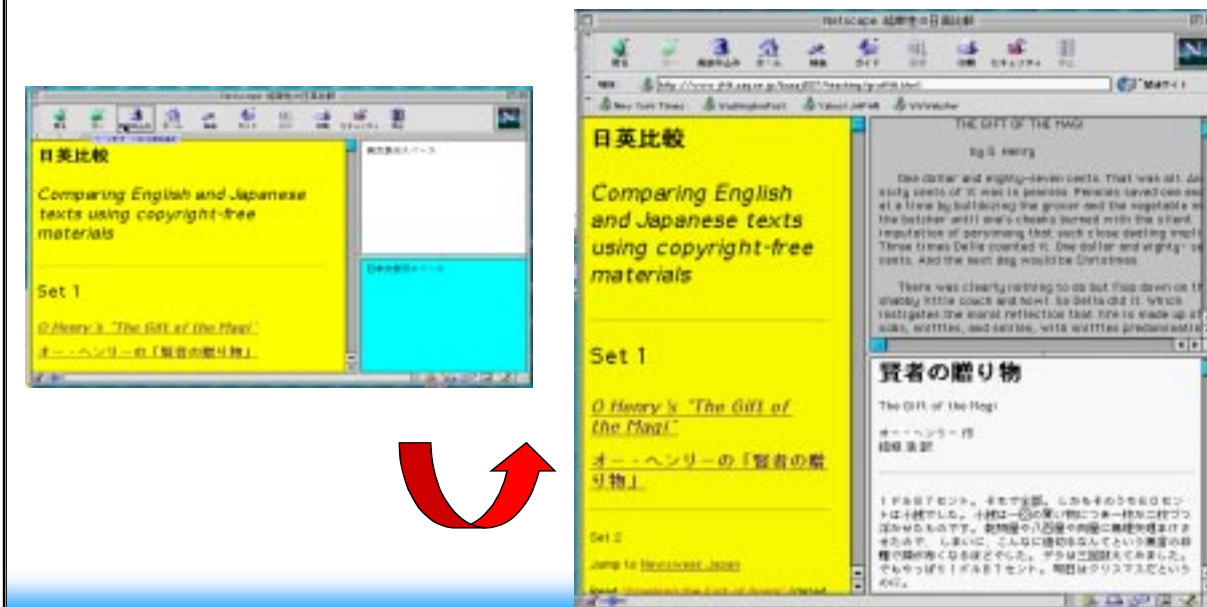
	English-Style Text	Japanese-Style Text
Class I, III	51.2%	59.4%
Class II, IV	43.2%	57.6%

Appendix B

On-Live Platform

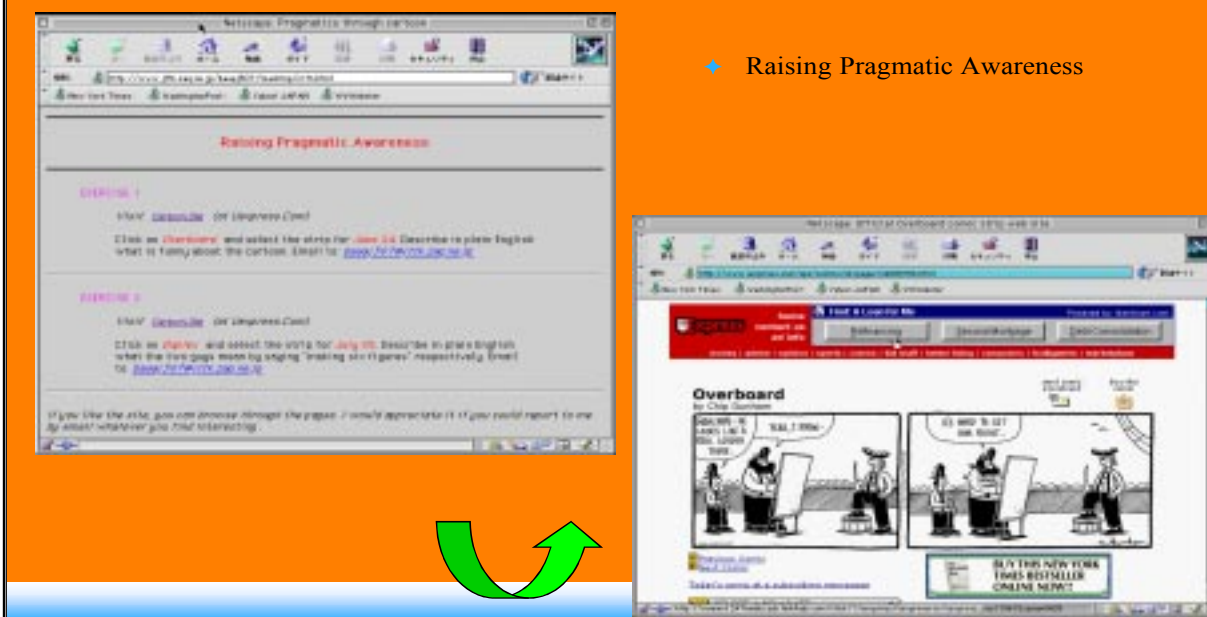
On-line Platform (1)-a

- ◆ Raising Textual Awareness **Note that the Japanese site is totally link-free. As for the English text, the students are instructed to access archives at Alex Catalogue of E-texts; <http://sunsite.berkeley.edu/alex/>*



On-line Platform (2)

- ◆ Raising Pragmatic Awareness



Ready, Set, Go

An Update on Using Web Technology for Successful Study Abroad

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Abstract

In Japan, whether it is in a major manufacturing company or a small, but aggressive start-up, business trends are toward product research, development and marketing that rely on creative use of information technology by computer literate personnel. With regard to English Language study, the impact of information technology on business trends is also reflected in the growing numbers of students now opting to study language and business in universities in English-speaking countries. However, the choice to study abroad for a college degree has implications with regard to job search that often makes an integrated study abroad program within a Japanese institution a wiser career choice than matriculating at even a prestigious foreign university. In this paper I will discuss how integrating information technology (IT) and Web technology can mediate a balanced solution: a solution whereby students gain the cultural readiness of attending a Japanese university combined with the English language proficiency and computer skills necessary for a bright future in a global workplace.

A Web-Integrated Model for Study Abroad

At Miyazaki International College, students have the opportunity of studying abroad in the fall semester of their second year at one of 16 universities in five English-speaking countries. Agreements in the form of Memorandum of Understanding (as outlined by Monbusho guidelines) between MIC and the host universities delineate the terms and conditions to be met by both institutions in support of students' preparation of the portfolio. The parties agree to communicate regularly and mentor the students' progress throughout the semester. Host universities are selected on the merits of the following:

- Accreditation as a four year college, university or university foundation program offering courses compatible with a four year liberal arts degree at MIC; Flexibility in programming with academic opportunities meeting that meet the linguistic needs and personal study interests of MIC students;
- Willingness to enter into a provost or presidential level Memorandum of Understanding (MOU) outlining mutual goals and responsibilities;
- Programs that offer opportunities for cultural exchange within the English-speaking countries of Great Britain, Canada, United States of America, Australia or New Zealand;
- Accessibility of computers, Internet access and trained professionals in Information Technology (IT).

Students are required to sign an agreement with MIC outlining a full semester of study toward their liberal arts degree and to complete a portfolio documenting their studies abroad. Students receive credits toward their degree at MIC by taking courses abroad, completing an independent study project and creating a portfolio that documents academic progress and growth in linguistic fluency. Although the compilation of the portfolio is considered the students' own responsibility and is not a part of a course at the host university, support is provided by the host university in a mentoring process, which is discussed later in this paper.

Responding to the Information Age

Japan's Ministry of Education recognizing the importance of computer literacy, issued the following statement in its comprehensive report on educational reform. At the tertiary level, Monbusho's programs now support...

...the improvement of information processing equipment and network environments; support for the student to find employment using Internet; the improvement and expansion of the University of the air's broadcast range to provide nationwide coverage and provision of assistance to private universities and special training colleges. (Responding to the Information Age; Monbusho Report, 1998)

As with its Study Abroad Program, the use of computers and information technology is integrated throughout the liberal arts curriculum at Miyazaki International College. During four years of study, students develop skills in

- Preparing word-processed documents;
- Corresponding via email;
- Creating graphic presentation materials;
- Designing personal homepages and group websites;
- Researching current issues on the Internet;
- Participating in intranet discussion forums;
- Creating an electronic resume;
- Online job search;
- Corresponding via email.

Readiness Through IT

The complexity of the collaboration necessary for such a program requires on-going communication and negotiation both prior to and during the semester abroad. For this reason, IT with its many options for communication via The Web is utilized to facilitate an academically and culturally successful experience abroad. Readiness for a successful term abroad to a large extent depends on the individual's knowledge and familiarity with the host region. That is, the more one knows beforehand the less the risk of culture shock. A full discussion of culture shock may be found at (<http://www.miyazaki-mic.ac.jp/faculty/jgallian/readyssetgo/culture.htm>). At MIC, the students' skills in web technology are also a major component of the selection and application process and integrated into composition courses and appropriate content courses. Active learning on the Web before departure builds

- Personal confidence in linguistic ability;
- An awareness of the unique opportunities offered at the host university;
- Cultural familiarity of the region;
- Realistic expectations for the semester abroad;
- Individualized academic goals;
- Effective strategies for coping with culture shock.

Specific classroom activities include designing group websites containing information on a broad range of specific topics such as idioms and slang, local customs and holidays, business and economy, transportation to historical sites, sports events of the region, etc. These websites are routinely used for group oral presentations that

further oral fluency in English. Because the research is of personal interest and is of immediate benefit, these strategies generate personal motivation in English language study and promote academic pursuits for the time abroad. Other assignments might be to correspond through email about daily life with students who have previously studied at the prospective university to clarify concerns not covered in college catalogues or program brochures. Students also participate in web forums by posting their questions and sharing their research with classmates (See discussion of WebBoard™ below). Since a growing number of host families are also now using personal computers in their homes, students are encouraged to introduce themselves and exchange digital photographs with their prospective host family whenever possible.

Online Examples of Students Using IT

In 1999, students developed group web projects as a part of their English composition course assignments prior to going abroad. In these projects they were directed to design a site, which summarized their Internet research on idioms and slang, culture, and travel opportunities in the area. Links to sample projects may be found at (<http://www.miyazaki-mic.ac.jp/>).

In Spring 2000, students expanded this concept to include two issues of an online newsletter containing several types of articles relevant to their upcoming semester abroad. As they were the previous year, they have been given the option to extend the work on these projects through the semester abroad and to fulfill their portfolio requirements by creating new webprojects or expanding their existing websites at MIC. Students at three host universities: California State University, Chico, Arizona State University and University of Newcastle have expressed an interest in publishing “special editions” from their host sites and will be added to the Go Go Study Abroad Website during Fall, 2000.

The Benefits of a Portfolio Model for Study Abroad

All students must complete a portfolio that includes a minimum of 40 pages of written work documenting their progress in courses taken abroad and an independent study project of personal choice. Students are given guidelines suggesting appropriate formats, minimum requirements and supporting images, printed documents and memorabilia to be included. Traditionally, the completed portfolios range from 30-50 pages of written assignments from coursework along with 10-20 pages of an independent study written in collaboration with a university site mentor and a distance mentor at MIC in addition to images and supplemental materials. In the past three years, several options such as electronic or video formats have been added. The interactive and visual capabilities of a website is a natural format for a multi-modal presentation of the students experiences abroad and several students are now choosing this option. The popularity and affordability of digital cameras is also making video formats increasingly viable. A word of caution: The intensive use of IT required to complete both traditional, digital or electronic versions of the portfolio in this model for study abroad necessitates careful evaluation with regard to the accessibility of computers and IT staff at potential host university prior to the selection or enrollment process. Links to student pre-departure projects and electronic portfolios may be found online at (http://www.miyazaki-mic.ac.jp/Faculty/Jgallian/JALT98/Medium_Hot.html).

WebBoard™ was piloted as an interactive tool for web forums on by the MIC Study Abroad Program during Spring 2000 and has resulted in discussions on topics such as homestay, travel plans, airline tickets, regional slang and dialect, food, and safety issues as well as for maintaining a current student email directory. Because this was the initial use of web forums, general information on study abroad was also distributed through the traditional methods such as email, meetings and bulletin boards. However, since the initial response and participation was positive, web forums will be increasingly useful in cutting time needed for the selection and application processes, for group meetings and for answering individual questions faster in succeeding years. The chat features of this program will be “turned on” once the students reach their destinations. In this way, teachers and Study Abroad

staff members hope to maintain not only asynchronous but also “realtime” communication. Access to MIC WebBoard™ forums is restricted and can only be accessed by students and teachers participating in MIC Study Abroad 2000.

Future Considerations

The relationship between study abroad, IT and the workplace has now been recognized by educators at many universities in Japan as well as by the Ministry of Education (Responding to the Information Age, Monbusho, 1998). In its recent mandates, the Ministry promotes and supports upgrading of technical facilities to include student Internet access at all levels of education in Japan by the year 2001. The Ministry’s white paper further suggests that given the prevalence of English on Internet and the need for global communication, studying in an English-speaking country gives students the leading edge in securing a satisfying career after college graduation. The Ministry reported that the number of Japanese students studying abroad has increased dramatically during the nineties. Figures taken from the UNESCO Statistical Yearbook (1996 issue) showed the number of Japanese who enrolled in educational institutions abroad was about 59,000, doubling the number of those studying abroad just 5 years before. Further, that according to surveys and economic indicators, the most appealing job opportunities in number of openings and salary range for the future are in Internet-related jobs. The report cautions, however, that to compete for these high paying positions, students need entry-level proficiency in Internet research using information technology and in applications for designing multi-media documents and communicating via Intranets and the World Wide Web; Information and communication that is often only communicated in English. For this reason it also concludes that “even after several years of EFL study in Japan students may benefit from a semester or year-long course of study at a foreign university that provides certification or transferable credits to the Japanese University.” It further concludes that the trend should continue as “mass communication” and multi media delivery systems are utilized throughout the global marketplace.

For many educators, the support for and emphasis on IT and study abroad is a welcome trend. Yet, curricular integration of IT and accountability issues in study abroad are, for the most part, left un-addressed by the Ministry. Furthermore, even though phrases such as “active learning” and “computer literacy” are evident, little specific direction is given regarding methods to ensure a successful study abroad experience. Thus, it remains up to educators in the field to investigate and integrate innovations in technology and curricular possibilities; to prepare students linguistically and culturally to thrive in a new environment.

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A Reappraisal of the Effectiveness of Pausing on the Development of Students' Listening Comprehension Ability and Reading Speed

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Abstract

This paper is a sequel to Suzuki (1991, 1998, 1999), which demonstrated the effectiveness of pausing on the development of students' listening comprehension ability and reading speed: presenting recorded materials with artificial pauses between phrases or clauses works more effectively in developing their listening comprehension ability and reading speed than presenting recorded materials without any artificial pauses. A further experiment was conducted for one year to find out whether the effectiveness of pausing will still remain even when EFL classes are conducted in English. The result was that the effectiveness of pausing found in the past experiments seemed to have disappeared. In this paper, reasons for its seeming disappearance are discussed, based on the results of a computer analysis of all the utterances spoken by the author and an ALT in class. The analysis focussed on the average length of pauses at every chunk boundary and the average number of syllables of each chunk.

Introduction

Japanese learners of English are generally said to be inefficient in comprehending spoken English. They are also said to read and understand written texts very slowly. Many efforts have been made to improve their listening comprehension ability and reading speed. However, not all of the efforts have worked effectively.

In order to improve the situation, I have given false beginners listening and reading practices with the technique of artificially placing pauses phrase by phrase or clause by clause in the listening materials. The effectiveness of this technique has already been demonstrated in my previous studies over the past ten years.

The purpose of this paper is to reappraise the effectiveness of pausing on the development of students' listening comprehension ability and reading speed. A brief review of my previous studies follows.

Previous Studies

Kohno (1981) investigated the effects of pausing on listening comprehension, using hundreds of Japanese learners of English as subjects, and he found that the average score in listening comprehension tests is the highest when pauses are set at the end of every phrase. However, this does not necessarily mean the improvement of students' listening comprehension ability. Can students' listening comprehension ability be developed if they are trained with the use of listening materials with pauses *between* phrases or clauses?

The answer to the question above has already been provided in Suzuki (1991, 1998, 1999). It has been demonstrated that students who are trained with listening materials containing artificial pauses between phrases or clauses make greater progress in listening comprehension ability and reading speed than those who are trained with

listening materials without any artificial pauses between phrases or clauses. A brief summary of the results of my previous experiments is shown in Table 1. “Pause Groups” are the groups of students who were trained with listening materials containing artificial pauses between phrases or clauses, and “No-pause Groups” are the groups of students who were trained with listening materials without any artificial pauses.

Table 1. Effectiveness of Pausing on Students’ Listening Comprehension ability & Reading Speed (WPM & RE*) in Previous Studies (Suzuki, 1991, 1998, 1999)

Ability Group	Number of Times of Practice	
	Small (less than 45 times)	Large (more than 100 times)
High	Pause Groups > No-pause Groups	Pause Groups > No-pause Groups
Middle	Pause Groups No-pause Groups	Pause Groups > No-pause Groups
Low	Pause Groups No-pause Groups	Pause Groups > No-pause Groups

*RE (Reading Efficiency) = $\text{WPM} \div \text{the number of questions} \times \text{the number of correct answers}$

It was found that the Pause Groups, as a whole, develop higher listening comprehension ability than the No-pause Groups. But when the number of times of practice is small, pausing is effective only for the high ability groups. In the case of the middle and low ability groups, there are no significant differences in the listening test scores between the Pause Groups and the No-pause Groups. However, when the number of times of practice is increased, by using this techniques in every possible part of each class, then the Pause Groups get significantly higher scores than the No-pause Groups not only in the high ability groups but also in the middle and low ability groups (Suzuki, 1991). Furthermore, the students in the Pause Groups trained in listening with this technique develop not only higher listening comprehension ability but also faster reading speed than the students in the No-pause Groups trained with listening materials without any artificial pauses (Suzuki, 1998, 1999).

There are several possible reasons for this effectiveness. One of the reasons is that presenting recorded materials with pauses at the end of each phrase or clause means presenting the appropriate number of syllables which listeners can process holistically. Kohno (1993) demonstrates through his experiments that the number of syllables processed holistically is 1 through 7, plus or minus 2.

As for the listening materials for the Pause Groups, the average number of syllables in each chunk is less than 9, while, as for the materials for the No-pause Groups, the average number of syllables in each chunk is more than 9, more precisely 10.5 syllables, as is seen in Table 2 below. At the beginning stage, about 90 % of all the chunks given to the Pause Groups in my past experiments, and about 60% after 18 months were within the appropriate number of syllables. This fact seems to have a close relationship to the effectiveness of pausing.

Table 2. Average Number of Syllables of Each Chunk in the Listening Materials

	At the Beginning	1 Year Later	1 Year & a Half Later
Pause Group	6.0	7.4	8.7
No-pause Group	9.9	9.4	10.5

The second reason is that pauses placed between phrases or clauses allow listeners to have time to analyze each sense unit by synthesis. According to Kohno (1994), for analysis by synthesis, pauses must be longer than 450ms.

The third reason is that pausing between phrases or clauses means showing students grammatical sense units clearly, which helps them analyze by synthesis and also helps them to understand auditory stimuli. Pauses artificially set at the end of each phrase or clause can not only help students understand auditory stimuli but also develop their listening comprehension ability itself. In other words, the information processing ability, which is necessary at the primary information analysis stage in the process of listening comprehension can be improved smoothly by their receiving and understanding auditory stimuli phrase by phrase or clause by clause.

The fourth reason, according to Kadota (1987), is that a positive transfer to reading comprehension ability can be provided by listening training and silent reading training while listening to the passage being read aloud by native speakers of English. Kadota says that the transfer occurs because the process of listening comprehension and that of reading comprehension are psycholinguistically similar to each other, and because listening comprehension is incorporated into the cognitive mechanism of silent reading as an integral part of the latter through phonological coding to which readers listen.

Phonological Coding is said to have several stages. In the first stage, each syllable is articulated. In the second stage, the muscular movements of lips and vocal organs can be seen from outside. In the third stage, they cannot usually be recognized by readers but can be detected by the use of EMG (electromyography). In the fourth stage, in spite of the complete absence of speech-motor activities, phonological coding occurs in the form of a series of auditory images. And then finally comes the last stage of reduced phonological coding, where the speech recoding is incomplete in such a way that only the important part of printed stimuli require an elaborate phonetic representation during silent reading (Kadota, 1987).

As for the level of phonological coding of the subjects at the start of the experiments, their phonological coding was probably very primitive. In other words, almost all syllables of printed stimuli were articulated. It can be assumed from the following facts that the subjects read a passage aloud in a very halting way at the beginning of the experiments and their reading speed was very slow. The cause of this was probably that they had been exposed mainly to printed texts, but not exposed very much to spoken English. Consequently, words and their pronunciations (or sounds) had not been connected with each other. But after the nearly one-year training period mentioned above, their reading speed was improved and their oral reading made remarkable progress. This implies that their phonological coding progressed from a lower to a higher stage.

The Experiment

Purpose

Through my previous studies, it has been demonstrated that, for accelerating students' listening comprehension ability and reading speed, presenting recorded materials with pauses artificially placed between phrases or clauses is more effective than presenting recorded materials without any artificial pauses phrase by phrase or clause by clause. The purpose of the following experiment is to investigate whether or not the effectiveness of pausing will still remain even if EFL classes are conducted in English.

Subjects

The experiment was started with 161 second-year students (11th graders) from four of the eleven classes at a senior high school in the Kansai region of Japan. They were divided into the following two groups: a Pause Group and a No-pause Group. The Pause Group consisted of 80 students in the two of the four classes, while the No-Pause Group consisted of 81 students in the other two classes. See Table 3 below. In order to form the two homogeneous groups, 54 students from each group were chosen, in pairs, as subjects, based on the results of the pre-tests mentioned below. The number of subjects in each of the four classes is shown in the parentheses in Table 3.

Table 3. Groups, Classes and the Number of Subjects

	Class 1	Class 2	Class 3	Class 4	Total
Pause Group	40 (28)	40 (26)			80 (54)
No-pause Group			40 (25)	41(29)	81 (54)

Method

In the middle of April, a cloze test was given to all the students in the four classes in order to measure their general ability in English. A listening comprehension test and a reading comprehension test were also administered to measure their listening comprehension ability and their reading speed, that is, WPM and reading speed per minute with comprehension, or reading efficiency (henceforth, RE). The raw scores of each of these tests were converted into Z scores. The subjects with almost the same Z scores (plus or minus 2) in each test were paired. There were 54 pairs when the experiment was started in April, divided into three ability groups: a high ability group, a middle ability group and a low ability group. The subjects in the high ability group had scored over 55, and those in the middle ability group between 45 and 54, and those in the low ability group lower than 45.

In the middle of February, the subjects were given the same listening comprehension test as the pre-test and another reading comprehension test which had the same level of the readability as the pre-test. The average scores in the listening comprehension test and the number of words per minute read with comprehension were compared between the Pause Group and the No-pause Group.

Before the data were analyzed, 12 pairs were eliminated. 6 of the 12 pairs were eliminated because one person of each pair was absent from class 8 times or more, that is, about 10% of the whole number of classes of that year. The other 6 pairs were eliminated because of the results of the questionnaire provided in the last class of the school year to all the students in the four classes. More concretely, if one person of each pair was a member of the English Speaking Society, or practiced listening and speaking at home, using radio or TV English programs and so on, the pair was eliminated from the subjects. So the number of subjects became 44 in each group, as is shown in Table 4.

Table 4. Groups, Ability Groups and Subjects

Ability Group	High	Middle	Low	Total
Pause Group	11	21	12	44
No-pause Group	11	21	12	44

Treatments

The class met three times a week. Each class was 50 minutes long and was conducted in English for most of the time except for the translation or explanation of sentences which were difficult for students to understand. The time spent for translation was less than 10 minutes. Each group listened not only to utterances recorded on tape but also utterances spoken by their teachers (the ALT and me) when they practiced listening and reading or they listened to an oral introduction, true or false statements, questions, explanations including paraphrasing and instructions given by their teachers. The amount of time the two groups spent in listening to those utterances was almost equal. The only difference in the instruction given to the Pause Group and the No-pause Group was that the students in the Pause Group listened to artificially-pause-inserted utterances recorded on tape in the four kinds of listening and reading practices, while the students in the No-pause Group listened to normal utterances recorded on tape. The difference is shown in Table 5.

Table 5. Treatments

Group		Pause Group	No-pause Group
15-minute Listening Practice	(LP1)	25 times	25 times
2 to 4 minute Listening Practice before Q&A	(LP2)	68 times	68 times
15-minute Silent Reading Practice while Listening to the Passages Read Aloud	(RP1)	24 times	24 times
2 to 4 minute Silent Reading Practice while Listening to the Passages Read Aloud before Checking Understanding of the New Text	(RP2)	69 times	69 times

= pauses = no pauses

From April to February, the practice shown in Table 5 were experienced by both groups, with the use of recorded tapes; (a) a roughly 15-minute listening practice (henceforth, LP1) was given 25 times, (b) 1 or 2-minute listening practice before questions and answers in English on the text studied in the previous class (henceforth, LP2) was given 68 times, (c) a roughly 15-minute silent reading practice while listening to the passage being read aloud by native speakers of English, (henceforth, RP1) was given 24 times, and (d) 2 to 4-minute silent reading practice before checking of understanding of the new text to be studied (henceforth, RP2) was given 69 times. Table 6 shows a typical teaching procedure for the two groups.

Table 6. Teaching Procedure

1.	Warm-up Listening Practice (Once a week) or Reading Practice (Once a week)
2.	Review <ul style="list-style-type: none"> (1) Listening practice (2) Parallel reading (3) Shadowing (4) Question and Answers with textbooks closed
3.	Oral introduction / interaction
4.	Listening and Reading Comprehension <ul style="list-style-type: none"> (1) Questions on the text (and hints) for the 1st listening and reading (2) 1st listening and reading (Silent reading while listening to the text read aloud) (3) Questions on the text and hints for the 2nd listening and reading (4) 2nd listening and reading (Silent reading while listening to the text read aloud) (5) Check of understanding (6) Questions on the text and hints for the 3rd listening and reading (7) 3rd listening and reading (Silent reading while listening to the text read aloud)
5.	Explanation Paraphrasing (and dictation), Translation (of difficult sentences), Questions and answers (on the details of the text)

Table 6. Teaching Procedure (Cont'd)

6.	Oral Practice
(1)	Listening
(2)	Reading aloud practice
(3)	Listen and repeat
(4)	Parallel reading
(5)	Shadowing

Results

Table 7 shows the descriptive statistics of the results of the pre-tests and the post-tests of the three ability groups of each experimental group.

Table 7. Results of the Statistical Analyses of the Pre-tests and the Post-tests by Proficiency Level

Listening Tests	Groups	High Ability Group		Middle Ability Group		Low Ability Group	
		Mean	SD	Mean	SD	Mean	SD
Pre-test	Pause	18.7	1.62	14.0	2.24	10.4	1.16
	No-pause	18.5	1.81	14.4	2.04	10.0	1.35
	Difference	0.2		-0.4		0.4	
	p	n.s. (0.578)		n.s. (0.461)		n.s. (0.259)	
Post-test	Pause	26.5	1.92	20.8	2.02	16.3	2.19
	No-pause	24.8	2.99	19.7	2.80	15.0	2.37
	Difference	1.7		1.1		1.3	
	p	n.s. (0.221)		n.s. (0.212)		n.s. (0.203)	
WPM Tests	Groups	High Ability Group		Middle Ability Group		Low Ability Group	
		Mean	SD	Mean	SD	Mean	SD
Pre-test	Pause	139.6	11.70	115.3	14.5	95.3	12.32
	No-pause	136.0	10.68	118.6	11.5	98.1	10.34
	Difference		3.6	-3.3		-2.8	
	p	n.s. (0.339)		n.s. (0.537)		n.s. (0.523)	
Post-test	Pause	187.1	16.52	157.8	12.2	132.1	15.19
	No-pause	176.3	17.60	149.2	17.0	124.9	15.31
	Difference	10.8		8.6		7.2	
	p	n.s. (0.248)		n.s. (0.071)		n.s. (0.298)	

Table 7. Results of the Statistical Analyses of the Pre-tests and the Post-tests by Proficiency Level (Cont'd)

RE Tests	Groups	High Ability Group		Middle Ability Group		Low Ability Group	
		Mean	SD	Mean	SD	Mean	SD
Pre-test	Pause	122.5	20.17	92.1	16.6	64.5	14.58
	No-pause	125.3	17.68	95.8	16.5	67.0	13.91
	Difference	-3.8		-3.7		-2.5	
	p	n.s. (0.847)		n.s. (0.473)		n.s. (0.619)	
Post-test	Pause	179.1	21.65	137.5	21.28	105.4	20.79
	No-pause	170.3	18.07	129.1	26.9	96.2	24.12
	Difference	8.8		8.4		9.2	
	p	n.s. (0.488)		n.s. (0.227)		n.s. (0.339)	

The data obtained from the pre-tests and the post-tests were analyzed statistically using SPSS Exact Test, which can calculate the exact probability even when the number of subjects are small. For this analysis, the Mann-Whitney U test was applied, because the number of subjects was rather small and the normal distribution could not be expected.

The results of the statistical analyses of the pre-tests shows that there were no statistically significant differences in each ability group between the Pause Group and the No-pause Group in the scores of the listening comprehension test, WPM and RE of the reading comprehension test (See Table 8). In other words, in April the two groups were statistically equal in listening comprehension ability, WPM and RE.

After a year of instruction, it was also found that in the post-tests, there were no significant differences in each ability group between the Pause Group and the No-pause Group in listening comprehension ability, WPM and RE, though all three ability groups of the Pause Group are seemingly superior to those of the No-pause Group in the listening scores, WPM and RE. See Table 7.

Discussion

Though pauses played important parts in developing students' listening comprehension ability and reading speed in my past experiments, the superiority of the Pause Groups to the No-pause Groups seems to have disappeared, according to the results of the post-tests shown in Table 7. When the EFL classes are conducted mainly in English, will the effectiveness of pausing really disappear?

With a view to finding the answer to the question above, I made analyses of the auditory stimuli that the subjects are exposed to. I randomly chose four of the recorded passages used for the training in listening and reading comprehension, and put them into a computer and analyzed all the utterances in them with the use of a computer software called Cool Edit. I measured the average number of syllables of each chunk presented at a time, the average length of pauses at every chunk boundary and the average length of pauses between sentences. The results are shown in Table 8. Second, I analyzed the utterances spoken in English by the ALT and me in class. I had recorded some of my classes on audio tape. I chose two of them. Each of the classes was 50 minutes long. I put them into a computer and analyzed all the utterances in three classes with the use of Cool Edit. I measured the average number of syllables of each chunk presented at a time, the average length of pauses at every chunk boundary and the average length of pauses between sentences. The results are also shown in Table 8.

Table 8. Descriptive Statistics on Auditory Stimuli

	Average Number of Syllables per Chunk		
	Instructor	Tape (with pause)	Tape (without pause)
Mean	8.4	8.6	10.9
SD	4.5	4.3	5.2
	Average Length of Pauses between Phrases/Clause		
	Instructor	Tape (with pause)	Tape (without pause)
Mean	767 ms	1084 ms	581 ms
SD	266	386	179
	Average Length of Pauses between Sentences		
	Instructor	Tape (with pause)	Tape (without pause)
Mean	1272 ms	1924 ms	964 ms
SD	393	471	288

Kohno (1993) demonstrates through his experiments that in the work of listening comprehension there exist two kinds of processing: holistic and analytic. The former is the process in which listeners perceive a certain sense unit holistically, and the latter is the process in which listeners analyze some perceptual sense units by synthesis.

Table 8 shows that the average number of syllables of each phrase or clause in the utterances by the instructors is 8.4. According to Kohno (1993), the appropriate number of syllables which listeners can process holistically is 1 through 7, plus or minus 2 (mentioned above in Previous Studies). Thus 8.4, the average number of syllables per chunk, is within the range. It can thus be said that the ALT and I presented our students with an appropriate number of syllables for holistic information processing. Table 8 also shows that the average length of pauses at every chunk boundary is 767ms. This is longer than the length of pauses appropriate for analytical information processing in listening. According to Kohno (1993), the length of pauses necessary for spoken language processing is longer than 450ms. This suggests that 767ms is long enough for analytical spoken language processing.

These two factors contained in utterances by the ALT and me, that is, the average number of syllables per chunk and the average length of pauses between phrases or clauses, will probably be the reasons for the seeming disappearance of the effectiveness of pausing, because they helped the students in the No-pause Group improve their listening comprehension ability and reading speed as much as the students in the Pause Group, just as, in my previous studies, the students trained with listening materials with artificial pauses at the end of each phrase or clause showed greater progress in listening comprehension ability and their reading speed than students who were trained with materials without any artificial pauses.

Conclusion

The findings from this empirical study are: (a) The effectiveness of pausing on the development of Japanese students' listening comprehension ability and their reading speed still remains when EFL classes are conducted mainly in English. (b) Instructors' utterances usually contain the appropriate number of syllables in each chunk and adequately long pauses between chunks for students to improve their ability in holistic information processing and analytic information processing both of which are indispensable for understanding the meaning of utterances. It is therefore very important to conduct EFL classes mainly in English, at least from the viewpoint of developing students' listening comprehension ability and reading speed which are essential in oral and written communication.

There still remain many unsolved problems regarding the effectiveness of pausing. One of them is whether there will really be no necessity for recorded listening materials with pauses placed phrase by phrase or clause by clause. Table 7 shows that the differences in the post-tests between the Pause Group and the No-pause Group tend to be greater than those in the pre-tests, though there are no statistically significant differences in the post-tests between the two groups. Another is whether the results will be different if the instructors' level of proficiency in speaking English is higher or lower. There are many more. Further empirical studies are necessary to solve them.

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Reflecting on L2 Learning Process

The Benefits of Self-Evaluation and Grading with Progressive Rate

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Abstract

The focus of this paper is in the effort of integrating the self-evaluation with the progressive rate grading which yield a significantly different interpretation of typical students' test result in comparison to the traditional grading system. Under this framework, students were invited to be "researchers" of their own study to gain self-awareness and monitor self changes in their developments. Another aspect of this paper lies in the fact that the assessment is no longer the sole responsibility of the teachers themselves but becomes participatory and students gain partial control. Last but not the least, teacher can use furtive source of information collected from the self-evaluation and progressive rate grading, so that students' specialty and creativity is emphasized which in return enhances student-teacher interaction.

Introduction

When we talk about the efficiency of teaching, an important factor must be considered, that is how students think about themselves. A classroom teacher usually recognizes that students vary in learning purpose and in their ability to learn. Conventional teaching processes in most schools today are up to down direction, i.e. teachers conduct the whole teaching process. Dunkin and Biddle (1974) proposed a presage-process-product model from the context of classroom teaching to that of student learning. Biggs (1993) suggests to add a linear progression from presage to process to product, each component interacts with all other components, thus the model becomes a kind of integrated teaching process.

Self-evaluation is a process whereby teachers collect the idea on their own teaching effectiveness and analyse the information to consider improvement to that teaching. Of the various concerns in the teaching of second language, issue regarding students' self-evaluation has been little discussed. Taylor (1994) suggests that classroom tests have considerable potential for improving classroom learning, yet there is little evidence that the tests can reflect an efficient teaching process itself.

In this paper I would like to discuss the importance of the self-evaluation and grading with progressive rate in an integrated teaching process. I begin by examining the recurrent information for communication process for improving teaching processes. It is hoped that presentation of the research at this stage will stimulate discussion about the applicability of self-evaluation and progressive rate in research and practice.

The Role of Self-Evaluation in a Holistic Teaching Process

During the past decade, increasing emphasis has made certain change to learning strategies and to help students gain control over the strategies they used. Researchers have attempted to operationalize the notion of effective teaching by describing it as teaching that produces higher-than-predicted gain on standardized achievement evaluation. Much of research time is spent in the designing teaching program, developing course, classroom

administering, and grading students test (Stiggins, 1987). However, little attention has been paid to the strategies and the evaluation of reflecting teaching.

Every teacher aims to lead an effective teaching program. The concept of an effective teaching program is a somewhat elusive one. For example, in the form of correction of written or spoken production. The classic example is that of the *correction sheet* is often painstaking crafted to give feedback on the learner's essay. The following quotation is typical; see Holmes and Ramos (1991):

The (foreign language) teacher indicates mistakes such as grammar, punctuation, vocabulary, spelling and so on. The learning is then supposed to reflect the pattern of errors and take steps accordingly: Brush up sentences, use the dictionary more often, simplify the language to be within his own capacity for expression, and so on.

In real life, this type of diagnosis and feedback has a dubious effectiveness, and too often the most important feature of the correction process is always the teacher's grade. After noting the grade the student seldom glances at the essay again.

In other words, the key to use self-evaluation to maximize teaching benefit is knowing how and what the students want and when to provide feedback. That is, one important feature is to know the students' attitudes about the case of language learning and the characteristics of their social background. Another important feature of the learning context is that of time. In the designing of a language course or syllabus the question of how many hours are available for teaching and studying will obviously do much to determine what level of attainment can be reached. If the expected studying hours are beyond the learners' control, the teacher must adjust his objectives to what can reasonably be achieved in the time available.

These two factors interact from a self-evaluation survey through the recurrent teaching process: e.g. teacher's perceptions of students' motives or abilities influence their teaching process, while students' self-evaluation directly affect their predisposition's and their immediate decisions for action. Successful learning is viewed as dependent on the teacher's control and management of what takes place in the classroom. However what the teacher does is only half of the picture. The other half concerns about what the students do to achieve successful learning. Prompted by the self-awareness that students may succeed despite the teacher's methods and techniques rather than because of them. Hence the shift from traditional assessment to a more detailed examination of itself is encouraged and viewed as an important aspect of learning process.

The Role of Self-Evaluation in a Holistic Teaching Process

First, let me give a brief description about the use of students' self-evaluation and grading with the progressive rate in a holistic teaching process. Figures 1 and 2 illustrate the conventional and our proposed teaching process respectively.

The main difference between the conventional teaching process with the one we suggested in Figure 2 lies in the fact that the previous one is quite straight forward and mechanical which certainly cannot interpret the behavior of teaching or learning; while the later one, with the addition of pre-teaching/self-evaluation which differs itself from the proficiency test, gives teachers a chances to glimpse the other side of the coin, and prohibits teachers as the sole controller to decide what's good for students. The other strength for the diagram is the use of progressive rate, which is introduced first in this article, makes grading for teachers no longer a painstaking but personalized and highly revealing technique.

Reflective teaching is an important process in diagnosing and improving the problem of students' learning for an efficient teaching process. Just as the average patient is unable, without training, to identify the causes of the symptoms that are felt, so the learner cannot spontaneously name the causes of his language-learning problem. We believe that in order to help students keep up with the teaching program, it is necessary for teacher's become familiar with various background or potential ability.

There is much information that the teachers can get from the students self-evaluation form through the recurrent teaching process:

1. Providing teachers with clear descriptive and contestable material in preparing the teaching program.
2. Demonstrating to the teacher the different pattern among students, and that not all of the students' goals for studying are the same. And how much time does the student want to spend in studying this course.
3. Showing the teacher ways to adapt existing curriculum materials to new situations.

Grading with the Progressive Rate

The measurement of students' achievement is important in a holistic teaching process. At present, the most commonly used methods for evaluating progress in teaching programs have some drawbacks:

1. Treating final grade as empirically obtained indications of month-by-month process. In reality, final grades are extrapolated from one grade level to another.
2. Interpretation of test scores on the assumption that the tests used provide reliable and valid measures of the most important aspects of learning.
3. Spurious scores obtained from the use of a single test over wide educational levels.
4. Errors in interpretation because of use of inappropriate measurement.
5. Failure to select a really comparable control group due to the individual learning difference in terms of background and pace.

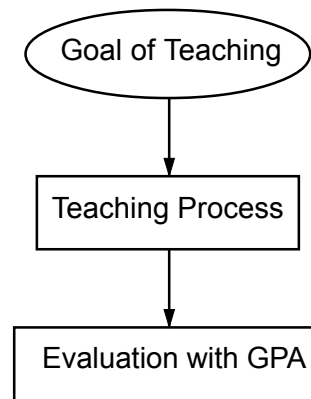


Figure 1. A conventional teaching process

Two interesting questions that people often ask are: (1.) In this test, is the student's grade better than he did last time? (2.) How does the teacher evaluate the students' background, studying hours and studying motivation etc..

Brookhart (1994) suggests that a good measuring model for students' achievement should not be merely measured by sectional or final tests. It should include the measurement about how much progress they had made. Hence, a good evaluation scheme for students' achievement performance should be measured not only by what they have learned but also how much the students make progress. In this section, we will suggest an appropriate model for evaluating students' achievement. We hope this concept will better suit the real situation than conventional ones.

Example. The following situation often occurs in a L2 class. Suppose we are teaching a beginning L2 class with 8 students: three of them are Japanese (age:17, 18, 21), two of them are Koreans (age: 25, 50), two Chinese (age: 15, 22) and one Vietnamese (age: 43). They come from different backgrounds in the culture, age and occupation. Under the teaching process, it is not appropriate to give their sectional grade (and final grade) merely on the grounds of their performance test. Since as a L2 teacher, with the goal of efficiency of teaching and learners-centered in mind, it is necessary to deliberate upon students' former educational background, thus the rate of progress must play a crucial role such that students will feel confident about their learning behavior and leave the classroom saying they have learned a lot.

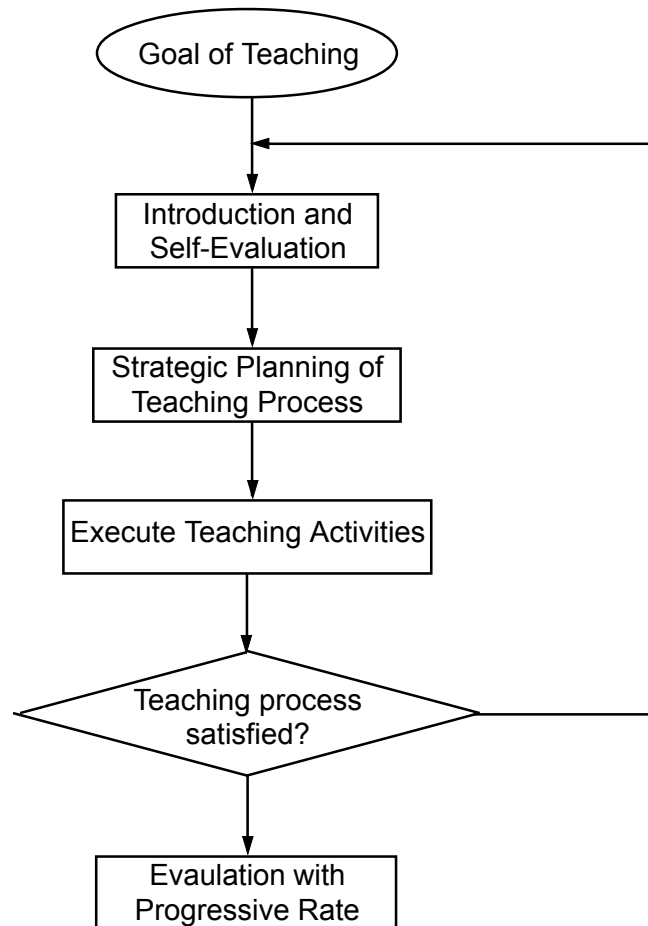


Figure 2. An ideal holistic teaching process

In traditional assessment, students' final grades are evaluated on some sort of so-called "objective" test. The result of student learning process is not taken into consideration. It also creates a situation that classifies and ranks students by those who "know" from those who "do not know" that is those who did not memorize the knowledge dispensed by the instructor. The attention of traditional assessment is mainly on cognitive ability where students' achievements are underestimated.

There are many ways of estimating the true amount of learner improvement (c.f. Brookhard, 1993; and Chang & Sun, 1993). These range from crude to sophisticated estimates. Choice among them is determined by the data available and by the use to be made of the data. In Model (4.1), I propose the rate of progressive methods.

An Empirical Example

The genre of this paper is neither a simple description of practice nor does this fit the quantitative research paradigm, rather it is an attempt to report on both the process of integrating research with pedagogy and the results of this process. There were three levels of research involved in the work reported here. First the process and findings of self-evaluation. Second, an analyzing of the data yielded by this investigation both by teachers and the students. Third, by weaving together the voices of the participants – the teachers and the students with the progressive rate grading, it is attempted and hypothesized that the individual difference in potentiality as well as ability is highlighted and focused, unlike the conventional grading which is obscure and generalized in comparison to the one we suggested in this paper.

In this section, a practical application of self-evaluation to holistic teaching process is demonstrated by an experimental study. In conducting the research, we randomly choose a class with 42 students, 25 females and 17 male, from 1000 freshmen in Jin-Wen Institute of Business and Technology, Taiwan. The Jin-Wen Institute is a typical vocational college. Most students are 19-20 years old and have been taking the English courses for six years.

A self-evaluation form conducted the sampling survey, see Appendix I. In the surveys, we let 1 as the lowest and 5 as the highest measure index for the items: motivation, self-evaluation and sectional-test.

General findings from the students' self-evaluation. An initial Statistical analysis exhibits some characteristic tendency for the students studying goal and motivation:

1. Students' study motivation is not high, with mean = 2.2 (lowest index is 1, highest is 5). 76% of students' answer that if English course is not required they will not take it.
2. Most students think reading is their strongest point in the English preference. The order of self-evaluation grades for five categories of leaning is: *reading, writing, speaking, listening* and *grammar*.
The students do think that grammar is their weakest point. Most Taiwanese students seem to have the same feeling, though they have spent most time in studying English grammar comparing to other categories.
3. Students think the order of importance in studying in English is: *Speaking > Listening > Reading > Writing, > Grammar*
Obviously, the student's studying goal is speaking (and listening) oriented.
4. As for efficient teaching methods, 62% of students think homework and 58% of students think examinations are the least efficient.

The above finding mirrors students' learning preference and attitude. The overwhelming impression is that students are afraid of English and reluctant in taking the course and they could never win the struggle with it. The findings also suggest one contradictory fact, to wit: what is considered to be the most important in this case "speaking" is also the most neglected part of learning.

Correlation Investigations

Table 1 illustrates the correlations among study motivation, self-evaluation, sectional test and studying hours between male and female students.

Table 1. Mutual Correlation

	Motivation	Self-Evaluation	Sectional-Test	Studying Hours
Motivation		0.57	0.81	0.33
Self-Evaluation			0.45	-0.36
Sectional-Test				-0.22
Studying Hours				

From the above table, we find:

1. Motivation and sectional-test are highly correlated.
2. Motivations with self-evaluation and studying hours are somewhat correlated.
3. Self-evaluation and studying hours after class are dramatically negative correlated; i.e., the higher the self-evaluation score gets, the shorter the studying hour spends.
4. Sectional-test and studying hours are not positive correlated.

This fact may be explained as: their English background in high school influences students' grade of sectional test. Those students with weak English background, though they spend much more time in studying English after class, only little progress in grade do they make within a short time.

Feedback for the Teacher

The information we get from the statistical survey is that the students are compelled to take English course. They have low sense of achievement due to the fact that although they spend most time in studying grammar yet it is categorized as their weakest point. This survey again uncovers the controversial issue of speaking as the one that receives the least attention in four skills.

Though it is difficult to give a detailed quantitative analysis of the way in which students' strategies change during the course, we could use progressive rate measurement in perceiving changes in the strategies during the learning process. Thus, about the choice of materials we can also obtain insights for future course design. Since certain text types seem to adjust certain patterns of processing.

Feedback for the Students

One striking fact is that the more time students use in studying, the lower the self-evaluation grades they give themselves. It coincides with the correlations between sectional test and studying hours. This calls for the urgent necessity for student strategic learning: Learners do not spontaneously analyze their learning strategies in depth. They need explicit help to name the strategies they are using and compare them with possible alternatives.

Progressive rate grading does contribute greatly to examine themselves and others. Hence provide insights for the student into what is working and what is not working during the learning process. Furthermore, by reconsidering the learning goals, the students develop an awareness of their own learning and evaluating. Learners can become the best judges of how they learn most effectively, both in and out of class.

Grading with Progressive Rate Measurement

Let G_t be the grading at time t , G_{t-1} be the grading at time $t-1$, and $\Omega = \{g_1, g_2, \dots, g_n\}$ be the total state of evaluation ranks, for example $\Omega = \{0, 1, 2, 3, 4\}$. For a continuous range of evaluation, the Ω becomes an interval, i.e. $\Omega = [g_1, g_n]$. We define the progress rate at time t , P , based on the evaluation range as:

$$P_t = \frac{G_t - G_{t-1}}{g_n - g_1} \quad (4.1)$$

If the range of $g_n - g_1$ is too wide, we can revise the interval for practical application. Therefore the grading (at time t) $PGPA_t$ based on the progressive rate can be written as the following formula:

$$PGPA_t = \frac{G_t + G_{t-1} + \dots + G_1}{t} + P_t \quad (4.2)$$

Example 4.1 Suppose we have three sequential tests for three students: X , Y and Z . And suppose each has the equal weight. The grading scheme is based on the 5-rank scale, $\Omega = \{g_1 = 0, g_2 = 1, g_3 = 2, g_4 = 3, g_5 = 4\}$ if their testing results are as follows:

Table 2. Comparison of Traditional and Progressive Rate Rankings

	First Test	Second Test	Third Test
Student X	0	2	4
Student Y	2	2	2
Student Z	4	2	0

It is easy to see that under the traditional grading scheme, these three students have the same GPA 2 points (for the three times). On the other hand, according to formula (4.1) and (4.2), the GPA with the progressive rate will be, for student X :

$$PSAP_3 \text{ (after third test)} = \frac{G_1 + G_2 + G_3}{3} + P_3 + P_2 = \frac{4 + 2 + 0}{3} + \frac{4 - 2}{4 - 0} + \frac{2 - 0}{4 - 0} = 3$$

Similarly, we can calculate students Y and Z . From Table 3, it is seen that all three students got a GPA with 2 points for the whole teaching process with the traditional grading scheme. While they will get the different GPA (here is GP as in the formula (4.2)), if we take the progress rate into account. That is, the student X who makes most progress in the teaching process get $GPAP=3$; the student Y who makes neither progress nor worse the same score of test in the teaching process get $GPAP=2$; while the student X who makes worse and worse score in the teaching process get $GPAP=1$.

Table 3. Students Get the Same GPA but Their GPAP's are Different

Grading Comparison	Student X	Student Y	Student Z
GPA (Traditional method)	2	2	2
GPt (Progressive rate consieration)	3	2	1

From Table 3, it is seen that all three students got a GPA of 2 points for the whole teaching process with the traditional grading scheme. While they will get the different GPA (here is GP as in the formula (4.2)), if we take the progress rate into account. That is, the student X who makes most progress in the teaching process get a $GPAP = 3$; the student Y who makes neither progress nor worse the same score of test in the teaching process get a $GPAP = 2$; while the student X who makes worse and worse score in the teaching process get a $GPAP = 1$.

Conclusion

As professional L2 teachers, we must continuously monitor the effectiveness of our teaching. The use self-evaluation and progressive rate in a holistic teaching process may increase the efficiency of teaching. Since with the *PGPA* we hope the numerical values will render more meaningful variances for learners as well as the teachers. By emphasizing the *PGPA* each student is distinguished by his potentiality and individuality

Clearly, this instrument seems to reflect the ways students think about their learning goal as well as provide a way of voicing what students feel implicitly – that the teacher may have gone unnoticed. The primary focus of self-evaluation is reflection of teaching. The L2 teacher must reflect on the effectiveness of his teaching to gather the information. Reconsideration is then undertaken when analyzing the information collected.

Finally, progressive rate grading can stimulate the students' studying motivation, and help teachers to arrive at a more realistic policy in the students' achievement evaluation.

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Relation Between Improvements of Perception and Production Ability During a University English Speech Training Course

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Abstract

The present study examined the relation between perception and production ability during perception and production training on English contrasts, /s-T/, /z-D/, /b-v/, /l-r/, /gl-gr/, /æ-e/, and /a-Ø/, among Japanese university students. A 3-week perception training period followed by a 6-week production training period was conducted at two linguistic levels (syllable and word level). The subjects were tested on their perception and production ability before and after each training. The results showed that the overall production ability significantly improved during the perception training, but not vice versa. It was suggested that the improvements in the perception ability may generally transfer to those of production ability, but that the reverse may not hold true at least after the subjects attained some basic level of perception ability. It was also found that the relation between the production and perception improvements significantly differed not only among the target contrasts, but also among the linguistic levels.

Introduction

The present study attempted to examine the relation between improvements of perception and production ability during perception and production training conducted in an English course at Ryutsu-Kagaku university. Previous research has suggested that there is a close, yet complex, relationship between production and perception ability among adult L2 learners (e.g., Bohn & Flege, 1997; Flege, Bohn, & Jang, 1997). Some evidence indicates that improvements in perception training generalize to those of production ability (e.g., Neufeld, 1977; Rochet, 1995; Yamada & Tohkura, 1997), while other evidence indicates that improvements in perception ability do not necessarily lead to those of production ability (e.g., Hemphill, 1999). There is little data available on the effect of production training alone on perception training, although the finding that a combination of production and perception training improves perception ability more than perception training alone suggests some facilitating effects of production training on perception ability (e.g., Yamada & McDermott, 1999). In sum, it remains inconclusive how speech perception and production ability affect each other during the course of L2 learning. Specifically, it is not clear whether and how the relation may differ depending on the target contrast. In addition, few studies have provided empirical data on the relation obtained in the actual classroom setting.

The present study was aimed at providing data on the relation between improvements of perception and production ability in seven English contrasts, /s-T/, /z-D/, /b-v/, /l-r/, /gl-gr/, /æ-e/, /a-Ø/, in an intensive perception and production training course at a university level. The study attempted to examine the following questions; (a) “Did the perception ability significantly improve through the perception and production training?” (b) “Did the production ability significantly improve through the perception and production training?” (c) “How did the improvements of perception and production ability relate to each other during the course of the training?”

Methodology

The subjects were 40 Japanese university students at Ryutsu Kagaku University in Kobe, Japan. Of those subjects, 14 students were assigned to the regular group, 11 to the extra group and 15 to the control group. All of the subjects were tested on their perception and production ability three times during the 13-week course (pretest, post-perception-training, post-production-training test). All the perception tests had the same format; seven minimal pairs, /s-T/, /z-D/, /b-v/, /l-r/, /gl-gr/, /œ-e/, and /a-Ø/, were tested at two linguistic levels (syllable and word). Sixteen two-alternative forced-choice identification questions were given at each linguistic level.

The same production test was conducted three times at the same time with the perception test. The test was designed to evaluate the subjects' productions of the seven target contrasts at the two linguistic levels. The subjects recorded 10 productions per contrast at the two linguistic levels. Five adult native English speakers who were blind to the intended target contrast evaluated the subjects' productions. A scale of 6 was used for evaluation, from "definitely" in one category, to "definitely" in the other category. The reliability of the evaluation was high both for within-evaluators and for between-evaluators.

Following the pretest, the perception training was conducted over a period of 3 weeks. The regular group received a total of 270 minutes of training. The extra group received additional 150 minutes of training on additional three separate days.

The two groups were also given perception training done at home in the form of homework, totaling 420 minutes for the regular group, and 800 minutes for the extra group during the same period. Following the perception training and the post-perception-training test, the production training was held for the regular and extra groups over a period of 6 weeks. The same stimuli from the perception training were used. The regular group received a total of 540 minutes of training while the extra group received additional 300 minutes of training. The subjects were also given production training done at home, totaling 800 minutes for the regular group, and 1200 minutes for the extra group. The control group did not receive either perception or production training.

All the speech stimuli used in the perception test, and perception and production training consisted of tokens produced by four adult native English speakers. Tokens produced by different speakers were used in the tests and the training.

Results

The first analyses examined whether the perception ability significantly improved through the perception and production training, averaged over the target contrasts and linguistic levels. As the statistical analyses showed no significant differences between the regular and extra group in the degree of the improvements across the tests (i.e., pretest, post-perception test, and post-production test), the data of the two groups were combined for the following analyses. The results showed that the perception scores significantly improved between the pretest and post-perception test, $F(1, 23)=107.01$; $p=.000$, but not between the post-perception test and post-production test, $F(1, 23)=1.48$; $p=.236$. The control group showed no significant increase in their perception scores either between the former two tests, $F(1, 14)=2.92$; $p=.109$, or the latter two tests, $F(1, 14)=.67487$; $p=.425$. The results indicated that, averaged over the target contrasts and the linguistic levels, the subjects were able to significantly improve their perception ability through the perception training, but not through the production training.

The analyses also showed that the changes in the perception scores across the tests differed among the target contrasts and linguistic levels. The target contrasts which did not follow the generalization above were the following; 1) the perception scores did NOT significantly improve through the perception training in /l-r/ at the syllable level and /a-Ø/ at the word level; 2) the perception scores DID improve through the production training in /gl-gr/ at the word level and /s-T/ at the syllable level.

The next analyses examined whether the production ability significantly improved through the perception and production training, averaged over the target contrasts and linguistic levels. The dependent variable was “the production difference score”, which represented the difference between the rating of the paired sounds (e.g., if a rating was 2 for one sound and 5 for the paired sound, the score was 3). The statistical analyses showed significant differences in the production difference scores between the pretest and post-perception test, $F(1, 23) = 24.44$; $p = .000$, as well as between the post-perception test and the post-production test, $F(1, 23) = 48.11$; $p = .000$. The control group showed no significant difference between the pretest and post-production test, $F(2, 28) = .52$; $p = .584$. The results indicated that the subjects improved their production ability through the perception as well as production training, averaged over the target contrasts and linguistic levels.

The analyses also showed that the changes in the production scores differed among the target contrasts and linguistic levels. The target contrasts which deviated from the generalization above were the following. First of all, the production ability significantly improved through the perception training, but did not do so through the production training in /s-T/ & /z-D/ at the word level. Second, the production ability did not significantly improve through the perception training, but did so through the production training in /gl-gr/ at both levels and /œ-e/ at the syllable level. Finally, the production ability did not significantly improve across the tests in /œ-e/ and /a-Ø/ at the word level (but did so at the syllable level).

The next analyses examined the relation between the perception and production improvement combining the data on the perception and production scores. The results showed that, in general, both perception and production ability improved through the perception training, but only production training did do so through the production training. The results, however, showed different patterns of the relation between the perception and production improvements in a number of contrasts at different linguistic levels.

Discussion

It was found that the perception ability significantly improved through the perception training, but not through the production training, averaged over the contrasts and linguistic levels. This finding suggested that the improvements in production ability may not generally transfer to those of perception ability at least after the subjects attained some basic perception ability through perception training. It may be the case that, in the production training, the subjects' attention shifted from attending to subtle acoustic/phonetic differences to monitoring their articulation. The shift in attention may have prevented the subjects from further refining their perception ability. It may also be possible that listening to their incorrect productions interfered with further improvements in their perception ability.

It was found that the production ability significantly improved through the perception training as well as the production training, averaged over the contrasts and linguistic levels. This finding generally supported the conclusion that improvements in perception training generalize to those of production ability (Neufeld, 1977; Rochet, 1995; Yamada & Tohkura, 1997). Yet, the present results also found that the transfer may not readily occur for the sounds which require relatively refined control of articulation (such as /gl-gr/). It seems, therefore, that while the transfer of perception to production ability may generally occur, it may also depend on the level of articulation difficulty for a particular sound.

The present findings provided some pedagogical implications for L2 production and perception training in a classroom. First, perception training should be integrated more into a pronunciation course because perception training has positive effects on improving production ability. Perception training is also easy to administer and requires less individual guidance. Furthermore, perception training may be encouraging because students can see their improvement more clearly. As to when perception training is conducted, it seems desirable to provide the training before production training. Second, even if production ability is expected to improve during perception training, production training is still necessary and effective in order to achieve more refined production ability,

especially for difficult-to-produce sounds such as /gl-gr/ and /b-v/. Third, it is preferable to design different production training programs depending on how the perception and production ability interact for the particular contrast. For example, changing the proportion of perception and production training with different target contrasts may be effective.

Another study is under way which examines whether the pattern of improvements in perception and production ability may change when the order of the training is reversed. It is hoped to provide further data on the relation between perception and production ability in the near future.

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Repeated Presentations of Material: Is It Effective for EFL Students' Listening?

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Abstract

Thanks to the advances in digital audio technology, it becomes much easier for language teachers to present any two given points of listening material repeatedly to their students without losing sound quality. However, the effectiveness of repeated material presentations has not yet been proven satisfactorily. An empirical study therefore was conducted to test the following two hypotheses; (1) repeated presentations of material are effective for EFL learners' listening, and (2) the effectiveness of repeated presentations is influenced by i) the length of the sentence, ii) the grammatical complexity of the sentence, and iii) the proficiency level of the learner. The subjects were 148 Japanese college students learning EFL. The results indicated that repeated presentations are indeed effective, although the degree of effectiveness varies with learners' proficiency as well as material length and difficulty. Along with full descriptions of the findings, some pedagogical implications are also mentioned.

Introduction

Thanks to the advances in digital audio devices (MD and MP3 players, for example) it has become much easier for language teachers to select any two given points of listening material and to present the selected part to their students repeatedly without losing sound quality. Unfortunately, the effectiveness of this kind of repeated material presentations has been examined only by a few studies. At the phonetic-level, for example, Locke (1970) gave 100 American children German phonemes for a sound imitation task. He had a result that scores improved sporadically rather than incrementally, casting doubt upon effectiveness of repeated presentations. At levels higher than phonemes, to the best of our knowledge, only two studies investigated the effectiveness of repeated presentations. In Suenobu et al. (1986), a total of 100 Japanese university EFL students were presented a 167-word text several times and asked to report in their native language what they comprehended after each presentation. The results indicated positive effect of repeated material presentations. Takahashi, Shina and Takefuta (1988), on the other hand, gave 22 Japanese advanced students of EFL a dictation task of various sentence lengths, and reported that the repeated presentations might not be effective for more accurate listening of material. As this literature review shows, not enough research has been conducted to determine the effectiveness of repeated presentations of material on EFL listening. An empirical study therefore was conducted (a) to determine its effectiveness, specifically at the sentence level, and (b) to explore its relationships with the possible variables (i.e., sentence length, grammatical complexity, and learners' proficiency).

Hypotheses

The purpose of this study is thus to test the following hypotheses:

- 1) Repeated presentations of material are effective for EFL listening.
- 2) The effectiveness of repeated presentations in listening is influenced by
 - i) the length of the sentence,
 - ii) the grammatical complexity of the sentence, and
 - iii) the proficiency level of the learner.

In this study, listening was defined as integrative skills measured by a dictation task.

Method

Subjects

The subjects were 148 Japanese university students learning EFL as a required course. They were divided into two groups by their English proficiency. The difference of their English proficiency was confirmed by a 50-item cloze test ($t = 10.50$, $df = 76.57$, $p = .00$). A total of 56 subjects were in the “Higher Proficiency Group” (HG), while 92 were in the “Lower Proficiency Group” (LG).

Task

For the listening task, a dictation of 40 sentences was given to the subjects. To examine the influence of sentence length, 40 sentences of four different lengths were included. They were grouped into the sets of ten sentences according to the number of words of which a sentence consisted (i.e., 5, 10, 15, and 20 words). Each group of ten sentences then was categorized into two levels of grammatical complexity, “Easy Sentences” (ES) and “Difficult Sentences” (DS). For example, a group of 10 five-word sentences was constituted of five ES and five DS. The grammatical complexity of the ES and the DS was confirmed to be different on several readability and grammatical complexity scales. The difference was also confirmed by the judgement of two experienced EFL instructors. The sentences were recorded at a natural speed by two American native speakers of English.

Procedures

The presentation of sentences was arranged in such a way that the presentation order did not affect the results. The task was given during their class time. All the subjects were requested to listen to 40 English sentences five times each. After each presentation, they were asked to transcribe or modify the text. For scoring purpose, the students were also instructed to write down what they heard using different colored ink for each listening, (e.g., first time in black, second time in blue). After each listening, the subjects were given enough time to write.

Scoring and Analyses

Each word transcribed was scored for the individual reading of each sentence, based on criteria prepared by the researchers. The scoring criteria were made to reflect appropriately the subjects’ acoustic processing. The inter-rater reliability between two raters was satisfactorily high at .97. Both total scores and point gains of each presentation were analyzed by using the statistical test of ANOVA with repeated measures in STATISTICA Ver. 5.0J.¹ When a significant difference was found in ANOVA, LSD was administered as a *post-hoc* test.

Results

Overview

The HG and the LG were first looked at separately in terms of the effect of frequency of presentation, sentence length, and grammatical complexity. Then, each of those results was compared between the two proficiency groups. Tables 1, 2 and 3 and Figure 1 illustrate the change in scores after each presentation and the results of the statistical tests.

Table 1. Scores for Each Presentation and Results of ANOVA: HG ($n = 56$)

Difficulty	ES					DS					F	p
	1	2	3	4	5	1	2	3	4	5		
5 words (score range: 0-50)												
M	31.45	36.80	38.89	40.02	40.41	20.09	28.14	30.84	32.34	32.75	403.49	0.00
SD	7.38	7.02	6.75	6.11	6.06	5.44	5.27	4.80	4.53	4.31		
10 words (score range: 0-100)												
M	32.21	49.45	57.64	62.63	64.77	25.41	37.25	44.20	47.82	50.21	561.10	0.00
SD	13.29	14.72	13.87	13.15	13.17	9.72	13.14	14.19	14.76	14.67		
15 words (score range: 0-150)												
M	38.52	56.79	68.70	75.57	80.63	18.07	42.86	52.11	58.20	62.50	677.82	0.00
SD	13.72	18.18	20.59	20.31	21.66	11.00	14.14	15.77	16.86	17.14		
20 words (score range: 0-200)												
M	37.07	59.48	74.50	85.64	93.18	33.59	50.45	62.16	69.12	74.36	820.67	0.00
SD	12.27	16.07	18.44	20.39	20.39	7.14	12.16	14.45	16.11	16.99		

Table 2. Scores for Each Presentation and Results of ANOVA: LG ($n = 92$)

Difficulty	ES					DS					F	p
	1	2	3	4	5	1	2	3	4	5		
5 words (score range: 0-50)												
M	22.48	29.11	31.37	32.71	33.54	14.52	23.50	26.70	28.32	29.33	681.78	.000
SD	7.26	7.82	7.33	7.29	6.80	5.35	6.34	5.98	5.76	5.93		
10 words (score range: 0-100)												
M	19.09	32.21	40.18	44.97	48.03	16.11	25.70	31.78	35.64	39.55	946.54	.000
SD	8.88	11.49	12.93	13.45	13.62	6.87	9.61	10.48	11.33	12.172		
15 words (score range: 0-150)												
M	26.22	36.93	42.38	47.05	50.33	17.16	27.07	33.27	39.40	42.02	623.77	.000
SD	7.26	7.82	7.33	7.29	6.80	5.35	6.34	5.98	5.76	5.93		
20 words (score range: 0-200)												
M	22.25	38.64	49.66	57.82	63.90	20.87	32.02	39.62	45.35	49.72	595.67	.000
SD	9.49	12.28	16.20	19.32	20.45	7.31	10.12	13.06	14.55	15.98		

As seen in Figure 1, the scores of both proficiency groups increased significantly in proportion to the number of repetitions. This was true of all lengths of sentences and both levels of grammatical complexity. The only exception found was the HG’s scores between the fourth and the fifth presentations of five-word sentences (in both the ES and the DS), which did not have statistically significant improvement (see Table 3). In most cases, we therefore can say that the scores of both the HG and the LG improved significantly when the material was repeatedly presented.

The exception observed might be because the subjects in the HG wrote down every word they could (although 40 out of possible 50) by the fifth presentation. This would account for the HG’s not improving their scores at the fifth presentation.

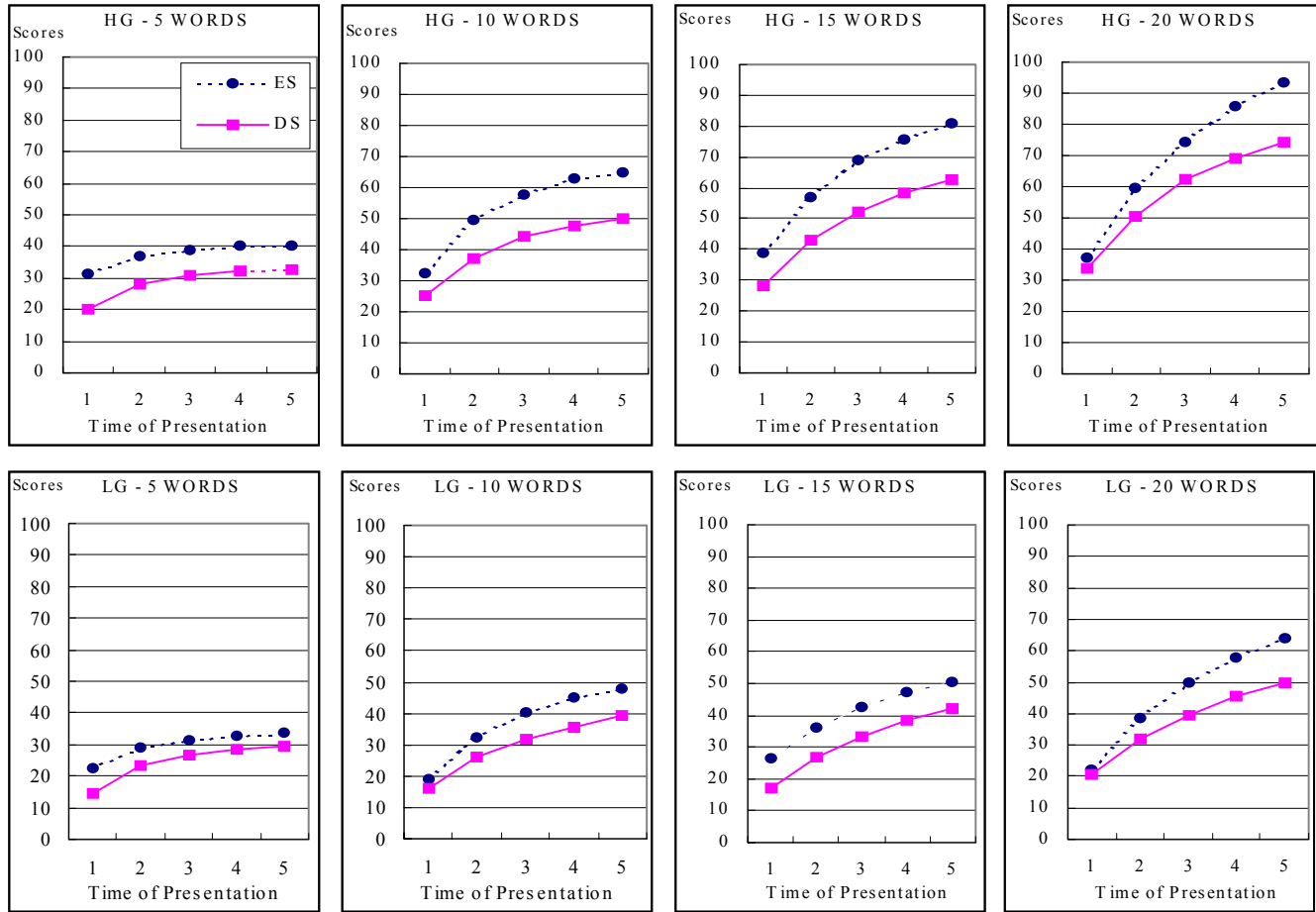


Figure 1. Changes in scores

Table 3. Combinations which did not Reach a Significant Value in LSD

		ES	DS
Presentation compared		4 vs. 5	4 vs. 5
HG	5 words	.359	.338

Repeated presentations are thus proved effective no matter how the three variables change. Our next question then is whether repeated presentations have the same degree of effectiveness in the different proficiency groups as well as in the changes of the sentence length and of the grammatical complexity. For this purpose, the data was analyzed in terms of point gains. Tables 4, 5, and 6 and Figure 2 illustrate the change in point gains after each presentation.

Table 4. Point Gains at Each Presentation and Results of ANOVA: HG ($n = 56$)

Difficulty	ES				DS					
Presentation compared	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	F	<i>p</i>
5 Words										
M	5.36	2.09	1.13	0.39	8.05	2.70	1.50	0.41	136.16	.000
SD	3.30	2.61	1.78	1.04	3.48	2.70	1.92	1.14		
10 Words										
M	17.23	8.20	4.98	2.14	11.84	6.95	3.63	2.39	134.08	.000
SD	7.00	4.26	4.40	3.00	6.97	4.46	3.27	2.51		
15 Words										
M	18.27	11.91	6.88	5.05	14.79	9.25	6.09	4.30	93.76	.000
SD	7.14	6.19	7.18	4.56	6.74	4.73	3.64	3.05		
20 Words										
M	22.41	15.02	11.14	7.54	16.86	11.71	6.86	5.34	127.78	.000
SD	6.93	5.60	4.71	6.23	7.27	5.47	4.22	3.58		

Table 5. Point Gains at Each Presentation and Results of ANOVA: LG ($n = 92$)

Difficulty	ES				DS					
Presentation compared	1-2	2-3	3-4	4-5	1-2	2-3	3-4	4-5	F	<i>p</i>
5 Words										
M	6.63	2.26	1.34	0.84	8.98	3.20	1.60	1.01	180.19	.000
SD	4.52	2.48	1.93	1.81	4.61	2.54	2.33	1.59		
10 Words										
M	13.12	7.97	4.79	3.07	9.80	5.87	3.86	3.91	140.43	.000
SD	5.42	4.63	3.31	2.69	1.90	3.46	2.69	5.03		
15 Words										
M	9.72	6.45	4.67	3.61	9.90	6.21	5.13	3.61	84.04	.000
SD	7.46	3.97	3.56	2.99	6.34	3.31	3.66	3.12		
20 Words										
M	16.40	11.02	8.15	6.09	11.15	7.60	5.76	4.34	111.09	.000
SD	7.21	6.46	5.07	4.98	5.44	5.04	3.78	4.16		

Table 6. Combinations which did not Reach a Significant Value in LSD

		ES		DS
Presentation compared		3-4 vs. 4-5	2-3 vs. 3-4	3-4 vs. 4.5
HG	5 words	.112	.001	.019
	10 words	.000	.000	.128
	15 words	.081	.003	.088
	20 words	.000	.000	.130
LG	5 words	.263	.000	.173
	10 words	.004	.001	.928
	15 words	.096	.093	.018
	20 words	.002	.006	.032

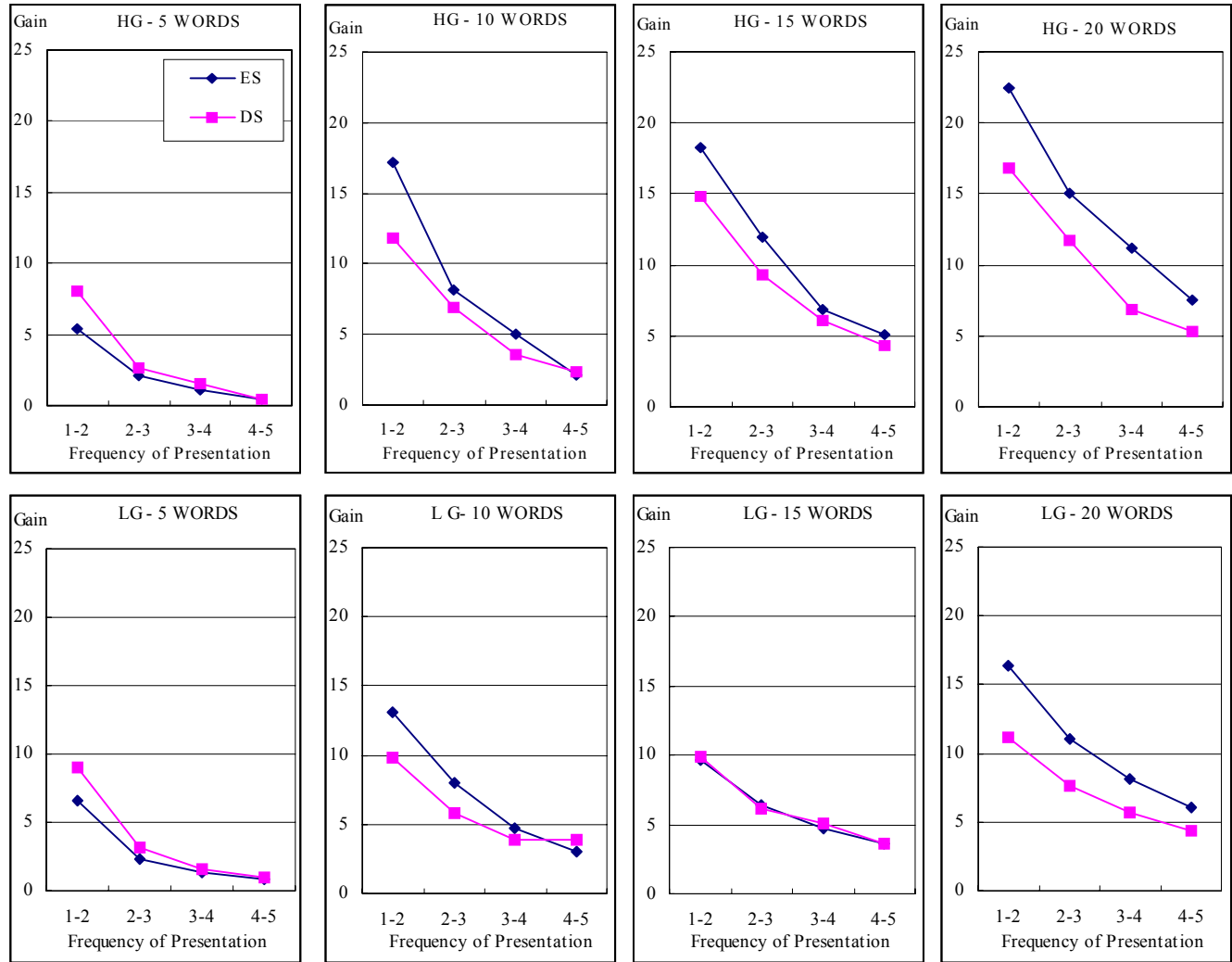


Figure 2. Changes in point gains

The Influence of the Sentence Length

To examine the influence of the sentence length, point gains were examined in terms of the maximum frequency of effective presentation. Maximum frequency of effective presentation is the final presentation in which the students scored at least a three-point gain. The threshold of three points was set based on the scoring criteria. As is seen in Table 5, the maximum frequency of effective presentation increased with the length of the sentences. Although the same degree of maximum frequency (i.e., five times) was listed in some cases, the point gains of longer sentences at fifth presentation were confirmed to be greater (see Tables 4 and 5). This implies that, if the longer sentences were presented more than five times, the maximum frequency of effective presentation might have increased. In addition, no ceiling effect was found in shorter sentences (see scores of five-word sentences in Tables 1 and 2). Based on these results, repeated presentations could have more effect with longer sentences. This finding applies to both levels of grammatical complexity and both groups of the subjects.

Table 7. Maximum Frequency of Effective Presentation

Group	HG		LG	
	ES	DS	ES	DS
5 words	2	2	2	3
10 words	4	4	5	5
15 words	5	5	5	5
20 words	5	5	5	5

The Influence of the Grammatical Complexity

As for the influence of the grammatical complexity, neither the HG nor the LG scores indicated any difference between the ES and the DS in the maximum frequency of effective presentation in Table 7, except the LG's five-word sentences. However, a closer analysis of the ES and the DS point gain differences revealed that the five-word sentences were unique compared with the other lengths. In the case of the five-word sentences, point gains of the DS tended to be more than those of the ES. On the other hand, in the case of sentences longer than five words, point gains in the ES were higher than those in the DS for each presentation. It should be noted here that the scores at each presentation in the ES were always higher than those in the DS (see Fig. 1). Thus, when the material was five words in length, the score differences between the ES and the DS narrowed as a result of repeated presentations. For the same reason, when the material was longer than five words, the gap in scores between the ES and the DS widened in proportion to the number of presentations. These findings show that grammatical complexity may influence the effectiveness of repeated material presentations. In five-word sentences, the effectiveness of repeated presentations may be greater with the DS than the ES, while, in longer sentences, the effectiveness may be greater with the ES.

The Influence of the Students' Proficiency Level

Another observation revealed the students' proficiency level also influenced the effectiveness of repeated presentations. In Figure 2 above, the LG marked higher point gains than the HG for every presentation of five-word sentences, whereas the LG indicated lower point gains than the HG for each presentation of 15- and 20-word sentences. Until the third or fourth presentation of the ten-word sentences, the HG was higher than the LG in point gains. After the fourth or fifth listening, the LG's point gains exceeded the HG's. In other words, with the shorter sentence material, the LG tended to take more advantage of repeated presentations than the HG, while the opposite seems to be true with the longer sentence material.

The students' proficiency level influenced not only the differences in point gains between the shorter and the longer material, but also those in scores between the ES and the DS. As was mentioned before, the difference in score for each presentation between the ES and the DS became narrower with the five-word sentences, whereas it became wider with the longer sentences. Although both subject groups shared this tendency, the score differences for the HG were always greater than those for the LG under the same condition. The *t*-test results in Table 8 confirmed that those difference were statistically significant. This observation indicates that the HG is more sensitive to sentence difficulty in repeated presentations than the LG. Together with the findings on the sentence length reported in the preceding paragraph, the learners' proficiency may influence the effectiveness of repeated presentations.

Table 8. Differences in the Scores by the 5th Presentation between ES and DS: HG vs. LG

Words in sentences	Diff. between ES and DS		<i>t</i>	df	<i>p</i> <
	HG	LG			
5	7.66	4.22	3.42	147	.001
10	14.55	8.48	3.31	147	.001
15	18.13	8.65	4.56	147	.000
20	18.82	14.18	2.35	147	.002

The findings of the present study appear to be inconsistent with those by Takahashi et al. (1988), who report that repeated presentations are ineffective. A reason for this inconsistency might also be accounted for by the influence of learner's proficiency. Takahashi et al.'s subjects seemed to have much higher English proficiency level than those of this study. They tested their hypotheses with postgraduates majoring in TESOL as the HG and undergraduates specializing in English as the LG. The higher proficiency of these subjects may have produced the results different from our study.

Conclusions

Before concluding, a limitation of the present study should be pointed out. In this study, the data of the HG and the LG were analyzed separately. The separation might have blurred the influence of learners' proficiency on the effectiveness of repeated presentations. Further studies thus need to examine the three variables at the same time to better clarify the relationships among them. With this limitation in mind, the following conclusions can be drawn:

1. Repeated presentations of material are effective for EFL listening.
2. The effectiveness of repeated presentations varies with
 - a. the length of the sentence,
 - b. the grammatical complexity of the sentence, and
 - c. the proficiency level of the learner.

Lastly, pedagogical implications are in order. First, the results of this study indicate that repeated material presentations by using such digital devices as MD and MP3 players are effective in language teaching. Second, the findings support the contention made by several researchers (e.g., Oller, 1979), in which at least three presentations of material is advisable for dictation tasks. Furthermore, our study adds two insights on the desirable number of presentations: First, when the presented material is easy and short such as the five-word ES, less than three time of

presentation may be enough for learners (in this context, Japanese intermediate EFL students). Second, when the material is longer, more than three repetitions should improve learners' understanding. The last implication is that teachers should adjust the length and the difficulty of material to the proficiency level of their students. If the material is too difficult, students are unable to efficiently utilize the bottom-up grammatical processing, and the effectiveness of repeated presentations can be limited.² At the same time, even though the grammatical complexity is properly adjusted, with too short sentences such as the five-word sentences in this study, there is little redundancy on which learners can rely to understand the sentences. In this situation, learners have limited access to the top-down processing. This might also result in the decreased effectiveness of repeated presentations.

Notes

1. "Point gain" in this context means the difference between the total scores of the latest and the previous presentations. For example, the point gain for the third presentation is the remainder of the total score after subtracting the total score of the second presentation from the third.
2. By top-down processing, learners make use of the knowledge they possess, such as background knowledge upon the topic, to understand the input. By bottom-up processing, learners construct the meanings from small units, such as phonemes, words and phrases, and understand the whole information (see e.g., Takeuchi, 2000).

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SaMOOrai: A Virtual Japan for Language Learning and Cross-Cultural Exchange

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Abstract

SaMOOrai is a MOO (Multi-user dimension Object Oriented) specially designed to meet the demands for a functional online language-learning tool in Japanese educational environments. SaMOOrai, unlike other educational MOOs in the world, allows a relatively large-sized class to login simultaneously, and let them enjoy chatting with each other, traveling around Japan on virtual trains, as well as doing various language learning activities without much network stress or troubles. This paper will describe how this MOO has been developed, and discuss how real-time online communication and learning take place in this virtual Japan.

Introduction

Having nothing to do with its association to popular bovine creatures, MOO has been drawing attention from a growing number of language teachers in CALL field. MOO is an Object-Oriented MUD, and MUD stands for Multi-User Dimension or Dungeon. MUD has gained its popularity as online dungeon games, where multiple users login and take on an adventure as they go digging into the dungeon, fighting against monsters, solving mysteries, and finding treasures.

With its adventure motif mostly taken off from MUD, MOO has been developed as a more “civilized” arena for online communication activities. In 1994, Julie Falsetti conceived an idea of using MOO technology for language learning purposes and in no time she established “schMOOze University” with her colleague Eric Schweitzer. It has been known as one of the best-administered and most popular language-learning MOOs in the world today. (Awaji, n.a.)

What MOO can Do

MOO is a text-based virtual reality (TBVR) utilizing the telnet protocol. It enables a variety of collaborative activities among users through synchronous and asynchronous communication. If a MOO is designed for the purpose of language learning, nothing learners do in this virtual environment can be achieved without the use of the target language. Thus, MOO offers an environment where students of a foreign language have a chance, without leaving their homes, to put themselves in a “foreign” community in which the foreign language use is vital to get by.

Learners connecting to a MOO will stroll around from one room to another, meeting people from different cultures and countries. As they run into each other, they exchange greetings, introducing themselves, and get to

know each other through online chatting. One of the features of MOO is this chatting, or synchronous computer-mediated communication (SCMC). The people on the same chat channel can “talk” as if they were seeing each other in person without feeling a time lag, a nuisance often found in many other chat sites.

If the learners find themselves in the same congenial mood, they can play some language games which are provided in a MOO, go on a trip, take lessons, and build up a room, a house and a town together. They can do almost any kind of social interactions virtually if they are imaginative enough, and unlike just a fantasy, everything they create in a MOO (these are called “objects”) do not vanish when they come back to the real world; they remain to exist there. Here is another feature of MOO: unlike a bare chat channel, it provides an “environment,” an environment which we can build, share, and interact with. It provides a virtual community where people from all different background learn to live together in harmony.

Development of SaMOORai and its Features

SaMOORai is a MOO for learning English and brainchild of Awaji, built in a server at Chubu University in Japan. It was created out of his strong desire to build a MOO specially designed for English learners in Japan, and through his ample experience of administering schMOOze University as one of the programmers. It was aimed to be a pioneering educational MOO in Japan.

Some of the features of saMOORai include following points:

- It adopts a motif of “mock Japan” – the content of this MOO reflects a pseudo-country of Japan. It is so designed that visitors to this MOO might feel as if they visited the real country of Japan. People will find similar landscape, social infrastructure, and public places here to what they would find in the real Japan. This setup is aimed to give a chance for Japanese learners to create, describe, and add Japan-related elements to this base country and introduce them to foreign visitors, as well as for foreign users to learn more about Japan.
- It provides smoother and more stable connection for users in Japan than the cases where they try to connect to other MOOs in other countries.
- It is designed to cope with the typical language class situation in Japan, i.e. large class size. Some excogitations are implemented to dodge a system crash when 40 to 50 people accessed saMOORai simultaneously.
- It adopts a fully-automated mock train system for the main means of transportation. A web of railroads are running through saMOORai and learners can enjoy taking a ride to wherever they wish to go, just like the way they take trains in the real Japan. Foreign visitors will be also able to simulate getting around by trains in the real Japan.

Connecting to SaMOORai

SaMOORai can be accessed through a bare telnet software application. However, it is much more comfortable for learners to use a MOO/MUD client software program, such as Pueblo for Windows and MUDDweller for Macintosh. These programs are freely available via the Internet. SaMOORai can be reached from any computers connected to the Internet unless in cases they are placed behind a proxy server, or a firewall. A detailed technical guidance can be found in the saMOORai official web site.

Once a learner establishes a connection, he/she will see the login screen shown in Figure 2.



Figure 1. The Official SaMOOrai Web Page

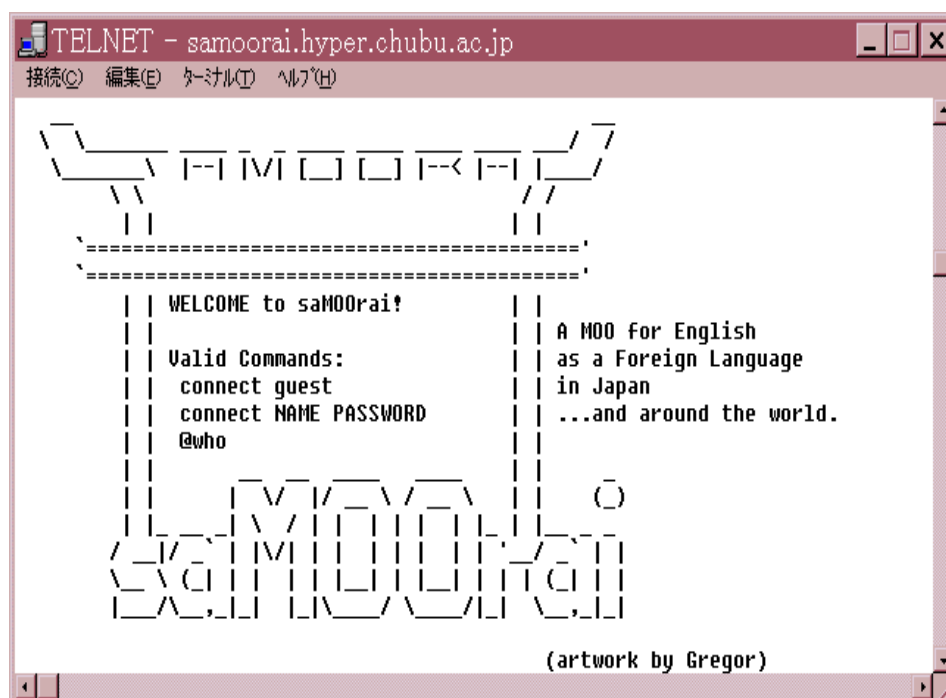


Figure 2. SaMOOrai Login Screen

The login procedure is simple and easy; learners are asked to input their player names and passwords, or just a word “guest” if they are not registered as regular players. Then, they are asked if they are Japanese or not. They are also asked to describe themselves briefly. At this point, if the learners are new to saMOOrai, they are guided to the area for a ten-step-walk-through training course of the MOO basics. Here, they can learn some of the very basic MOO commands to navigate themselves through saMOOrai. They include:

- @who: find out who is logged in at the moment
- say: speak to other people
- page: speak to other people in different rooms
- emote: show your actions
- look: examine an object or the surrounding environment
- @quit: leave the MOO

After learning the basics, the learners find themselves at an arrival gate, just like tourists to the real Japan would, at New Tokyo International Airport shown in Figure 3.

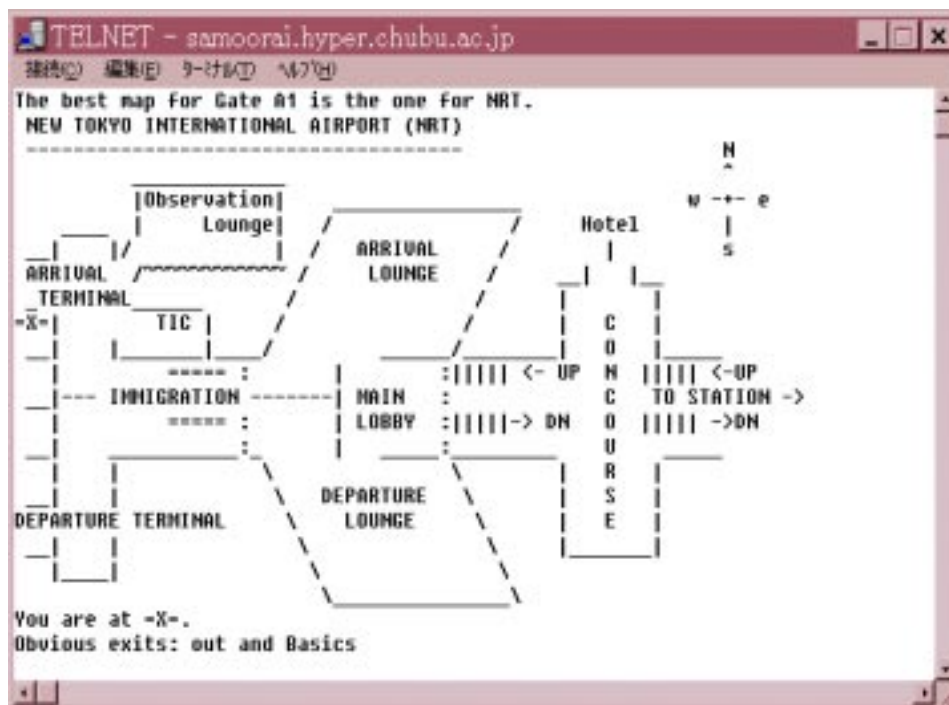


Figure 3. The Map of New Tokyo International Airport

The symbol =X= on the map denotes the current location of a player, and this symbol moves in accordance with his/her moves in saMOOrai space, though maps are not available at all locations in saMOOrai at the moment.

Having finished the immigration procedure, learners proceed to the Narita station and adventure into different parts of Japan by using a number of different train services, which are almost precise copies of those found in the real Japan.

SaMOOrai Communication

In saMOOrai, learners can be engaged in synchronous and asynchronous online communication with others by using those commands listed above. They can also interact with each other and with the surrounding environment as they use a lot of other commands or verbs. For example, they can “eat” food, “write” notes, “read” notes, “take” objects, “send” messages, “lookup” a word in a dictionary, “get on” trains, “give” something to others, and so on. In sum, they can experience most of ordinary social interactions within this virtual community of saMOOrai. It is expected that through such social interactions they brush up their communicative competence in the target language, namely English, and that they foster cross-cultural exchanges at the same time.

Application to English Education

SaMOORai has a good potential for being utilized in English classes in various ways. It should readily be used for reading, writing, or communication classes. At Chubu University, as part of English for Network Communication course, students login to saMOORai and are elaborating on their campus, taking lessons, and exchanging discussions. One of the recent activities requires the students to visit saMOORai and to report what they have experienced there to the class BBS for review and discussion. (Ozeki, 2000)

At Takasaki City University of Economics, as part of English and the Internet course, students are instructed to login to saMOORai for an online orienteering activity. Each student is given a task to achieve in saMOORai, which is usually made up with reaching to one place, finding out about something, getting information from other people, and making a required action. The students are evaluated on how fast and precisely they achieved the goal as well as how properly they behaved in social interactions. The details of this activity are reported in Harashima, 2000.

There may be scores of other ways to exploit saMOORai for English instruction. SaMOORai stays open for any ambitious and creative instructors of English to use it in any functional ways.

Summary

In these days, a number of virtual reality sites using fancy graphical interface are often talked about among educators. Compared with those, saMOORai might look a little old-fashioned: it is a world of simple texts. However, the good side of it is that it is a world constructed purely linguistically; it may be an optimal environment for linguistic activities. The difference between the two types of virtual reality might interestingly be compared to the difference between comic books and novels. Comic books are fun, in many cases self-explanatory and easy to follow, and relaxing. On the other hand, novels are all written in texts with minimal graphics, which is often less appealing to some fun-loving people as boring or unapproachable.

However, some questions must be posed here. Which inspires us more with imagination? Which moves us deeper? Which prompts our linguistic association more? Which challenges our intelligence more? Which leaves us with stronger impact? Which rouses within us a motive for creative activities more? The authors believe novels do. Likewise, saMOORai would be able to serve better in a way than other graphically-oriented virtual reality services as a more meaningful, impressive, and functional medium for improving learners' linguistic competence, though it may be just a world of simple texts.

Notes

saMOORai host: <telnet://samoorai.hyper.chubu.ac.jp:8888>

saMOORai web page: <http://samoorai.hyper.chubu.ac.jp:8080>

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Solutions for Limited Resources in Language Labs

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Abstract

The aim of this paper, on the basis of the author's personal experience, is to make teachers aware of the problems they may have to face when trying to use modern technology in their classroom and to show what teachers can do with a "traditional" language lab (without multimedia capacities) that lacks any specially designed language lab materials.

In this paper, the process, the advantages and the difficulties of making student recordings are described together with the possible uses. Requiring students to make recordings on a regular basis had a positive effect on their speaking skills and provided a fairly large resource for listening activities for the same class and for other classes as well.

Background

After a conference, most participants go back to their schools with high hopes of using new methods and technology they have seen in order to be more efficient as teachers. Very soon it turns out that enthusiasm is not enough and they go back to "normal".

There may be several reasons for the often experienced problem, the mismatch between the technical and human resources. For example with limited financial resources, a school cannot buy suitable equipment, in which case there is not much the teachers can do as the "hardware" is completely missing. In less apparent but more frustrating cases, the school has all the equipment installed, and well presented in the school's promotional material, but lacks the necessary materials to be used with the equipment, or the human resources and maybe the technical support as well. Training sessions for the users—teachers and students—are also needed, but often not provided. In some cases, the classes are so badly scheduled that most language classes are to be held at the same time—letting only one or two teachers benefit from the existence of the LL—while most of the time the LL is not used at all. Furthermore, prospective users may not be consulted before the equipment is purchased. A brand new computer lab full of computers but without sound boards or microphones is not really a joyful sight for the language teacher.

All schools are in a different situation but, in many cases, teachers have access to a "traditional" language lab rather than one with multimedia capacities for each individual. In others, university officials are content with setting up the lab but are not prepared to spend money on language lab materials; it is supposed to be the teacher's task to provide appropriate teaching materials. In this situation, many teachers "underexploit" or misuse their lab by seeing it as one tape player—the teacher's—with many headphones. All this means is that the students can hear everything a little better than without the lab. Alternatively, they may break the copyright laws by making a copy for each student so that they can listen to the passage at their own pace. However, this lack can be turned round so that it is even an advantage. For reasons not discussed here, but familiar to many teachers, students in Japan are often not willing to take active part in oral discussion even in small groups, even in an unthreatening situation. One way to address the two problems of inadequate resources and students' unwillingness to speak together is to require students to make regular recordings in English. By doing this, their motivation for oral communication is raised and as a consequence their fluency, their ability to communicate, and their listening comprehension will also improve.

Although there is some pressure on the students since they know that the teacher will check their recordings, they make the recordings themselves in a completely unthreatening way and can re-record them any number of times without students' losing face if there are mistakes. This activity can also foster recognition of the need for peer cooperation and peer evaluation.

Making Student Recordings

Procedures

1. Start with a traditional conversation activity about a given topic in pairs or in small groups.
Comments: This interactive activity will help students formulate their own ideas about the topic, as they hear and consider other students' ideas.
2. Ask the students to prepare a speech.
Comments: Students may need some time to look up words in the dictionary, to put ideas together in a coherent, easy-to-follow way, and generally feel more confident if they have enough time for preparation.
3. Students practice their speech in small groups, moving from group to group. Other students ask questions and make comments at the end of the speech.
Comments: Whenever students prepare speeches, they tend to simply read it aloud. In order to make it a bit more natural and also to memorize "chunks" from the speech -which they will be able to use in other, more natural situations -, the speech should be delivered without reading it. As the activity is done in a small group, students are less worried about mistakes. On the basis of the other students' questions and comments, the students can change and improve their speech.
4. Ask the students to record their speech.
Comments: Give a time limit for making the recording. Ask the students not to read the speech if possible.
5. Students swap tapes and listen to each other's recordings.
Comments: Besides being a good listening activity, students can get new ideas about the topic, and can also compare other students' performance with their own.
6. Students give feedback to each other.
Comments: It is recommended for the teacher to prepare a feedback sheet for each student if they are not experienced in such activities.
7. Students make changes and re-record their speech.
8. Ask the students to give their recording a title and to note how long the recording is.
Comments: Length is an important indicator both for the teacher and the student.
9. Ask your students to let you use the tapes in other classes as well.
Comments: It is commonly accepted that students check, see and hear other people's performance within the same class. However, it is not usual to let students in other classes do the same. If students do not feel comfortable with the idea of other schoolmates listening to their performance, you can ask them to let you use their recordings after they leave school.

If your students are really motivated and like this kind of activity:

10. You can ask them to include pictures or other materials with the recording.

Comments: Pictures can help with the listening task or raise interest.

11. You can ask them to make a worksheet for the listeners.

Comments: Preparing a worksheet is an appropriate activity, in which students can improve several skills: asking questions, focussing on important information, etc.

Now you have a different recording to give each person in your other classes.

Listening Activities

Prepare a worksheet or worksheets for the students. You can make students focus on the following things:

1. listening for main ideas
2. listening for details
3. taking down mistakes in
 - (1) pronunciation
 - (2) intonation
 - (3) grammar
 - (4) vocabulary
4. writing questions asking for details or clarification
5. transcribing the whole speech or parts of it.

Topics

Any topic could be used for these activities. Topics I have asked my students to talk about are as follows:

- | | |
|-----------------------------------|---|
| 1. Self introduction | 9. My hometown |
| 2. The School Festival | 10. Travelling |
| 3. Describing a Japanese festival | · The place I like the best |
| 4. The winter holidays | · The place I would like to visit in the future |
| 5. My school experience | 11. How to ...(do something, or use an equipment) |
| 6. My favourite writer | 12. My eating habits |
| 7. My favourite book | 13. My life ten years from now |
| 8. Reading habits | |

Advantages of Making Student Recordings

1. Students talk to other students about topics they are interested in.
2. They use simple English that other students can easily understand.
3. They learn to give and listen to peer feedback, which helps creativity and communication in general.

4. Creating short speeches prepares students for more difficult tasks like presentations.
5. A few weeks produces hundreds of recordings.
6. In a few weeks you can have recordings about a great variety of topics.
7. In some cases, you may even have the worksheets or pictures to go with the recordings.

Problems

1. Recordings might take a lot of time.
2. Students need to be taught to use the equipment.
3. Quality and usability of the recordings may vary considerably.
4. Students may focus only on making the recordings and neglect pair and small group activities.

I think that the advantages outnumber the problems. Once the teacher gets used to the procedure in general, fine tuning can be done later, improving the methodology year by year. Some teachers, especially non-native teachers, may question the usefulness of having students listen to other non-native students' performance in English. They argue that students cannot learn much from other students' bad English. In my opinion, motivation is far more important in the process of learning than listening exclusively to native speakers of a language. As listening to native speakers means listening to tapes most of the time, where the students do not have any control over the topic discussed, let alone asking the speakers questions for clarification, there is little or no involvement on the students' part in the activity or not much. What is more, students might get the false idea that being a listener is a completely passive activity. In real life, nobody would talk to somebody who does not show any reaction to what the other is saying. In my experience, students became more involved, they really listen in order to understand what has been said if they are motivated by the topic, by the task or simply by the other speaker. Another very important reason for the validity of listening to non-speakers is that according to statistics, most of the time non-native speakers of English use English to communicate with other non-native speakers rather than native speakers of English. If we are to prepare our students for real life communication then, we should consider using more material created by non-native speakers.

Some Characteristics of Prosody in Japanese Speakers' Reading of Japanese and English Passages

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Abstract

The purpose of this study is to investigate how and in what respect Japanese speakers show differences in prosody such as speech rate, pause and intonation when they read a Japanese passage and an English one. An experiment was conducted to this end, using five Japanese learners of English as subjects. The speech samples taken from their readings of Japanese and English passages were acoustically analyzed on the computer. The results showed (a) the subjects could not control the speed at their will as they did in the Japanese passage reading, (b) they could not read the English passage as smoothly and rhythmically as they read the Japanese one, and (c) they read the English passage rather monotonously in terms of intonation. These results imply that Japanese learners of English tend not to be so expressive in the English passage reading as in the Japanese passage reading.

Background of the Study

Prosody plays a crucial role in the human communication. O'Connor, J. D. (1973) states that the speaker's attitude is reflected in prosody such as pitch ranges, tempo, loudness, and voice quality. Lieberman, Philip (1967) also points out that one's emotion is realized as changes of Fo.

In the area of EFL/ESL this aspect of human speech is important and should be dealt with accordingly in the teaching/learning situation. Ohyama, Suzuki and Kiritani (1989) conducted a series of perception tests using the PARCOR analysis and synthesis technique to find out that prosody plays a more important role than the pronunciation of vowels and consonants, and that fundamental frequency is more important role than duration and intensity in the judgment of English-like speech.

In order to see how the Japanese Learners of English use Fo when they speak English, Kanzaki (1996) conducted an experiment using one American and three Japanese as subjects, and found out that the Japanese speakers showed clear differences in the pitch ranges from the native speaker when they read an English passage. The pitch ranges they used in their Japanese passage reading were also different from those they used in the English passage reading. The results are shown below.

Table 1. Pitch Ranges for English Passage Reading

	Native Speaker	Japanese A	Japanese B	Japanese C
High (Hz)	217	139	190	163
Low (Hz)	77	87	93	100
Range (Hz)	140	52	97	63

Table 2. Pitch Ranges for Japanese Passage Reading

	Japanese A	Japanese B	Japanese C
High (Hz)	156	219	173
Low (Hz)	94	92	102
Range (Hz)	62	127	71

Takefuta (1982) has already pointed out that the pitch range becomes narrower when Japanese speak English than they speak Japanese. His conclusion coincides with the above results.

The Purpose of the Experimental Study

The purpose is to investigate how and in what respect Japanese speakers show differences in prosody such as speech rate, pause and intonation when they read a Japanese passage and an English one.

Method

Five Japanese university students were asked to read a Japanese short story after reading it silently for one minute. Then they were asked to read the English version of the same story in the same way (see Appendix for the speech material).

Their readings were simultaneously saved as wave files (16 bits, 22kHz) onto the computer hard disc. These speech samples were acoustically analyzed on the computer using a software program, Multi-Speech Model 3700 (Kay Elemetrics Corp.).

Results and Discussion

Speech Rates (Figure 1)

The subjects read the Japanese passage at a different speech rate from each other. This seems to indicate that they could read it at their own pace; in other words, it reflects their individuality or expressiveness in the Japanese passage reading. However, they didn't show such individuality in the process of the English passage reading: as is seen in Figure 1, three lines for the English reading (A, B, C) almost overlap. This implies that they could not control the speed at their will as they did in the Japanese passage reading, resulting in lack of individuality or expressiveness.

A better reader can usually control the rate of speech when he/she reads in his/her own mother tongue. Pedagogically speaking, a learner of English should be trained so that he/she can control the speech rate of the target language properly in his/her reading.

Pauses (Table 3)

There were more pauses included in the English passage reading than the Japanese one. The English passage reading had a longer pause length on average than the Japanese one for two of the subjects, while the standard deviation was larger in the English passage reading for all three subjects. These results show that they could not read the English passage as smoothly and rhythmically as they read the Japanese one.

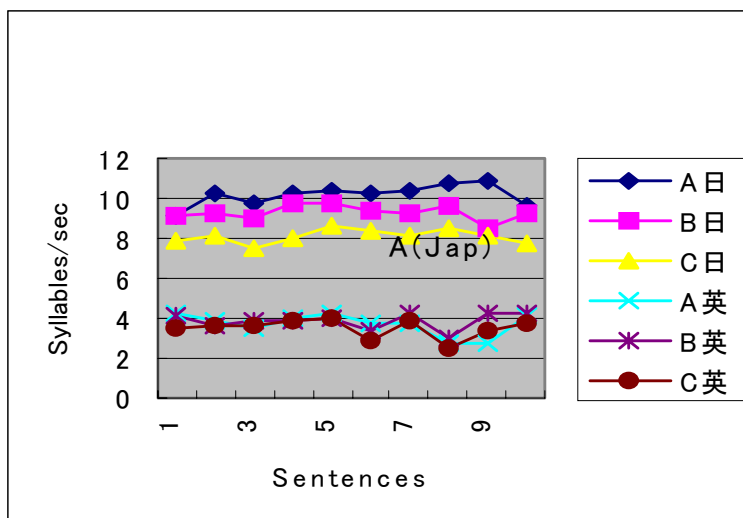


Figure 1. Speech rate changes in Japanese and English passage reading

Table 1. Number of Pauses/Pause Length/SD for Pause Length in the Japanese and English Passage Reading

	A Japanese English		B Japanese English		C Japanese English	
Pause (No.)	14	17	17	30	15	23
M (ms)	240	372	369	270	491	609
SD (ms)	129	245	209	211	285	325

Pause plays a very important role not only in daily speech but also in reading. Whether a speaker can control pause length and frequency or not affects expressiveness or persuasiveness of his/her talk. This aspect of speech is crucial in the reading of a target language, and should be taught accordingly.

Pitch Ranges (Figure 2)

The average pitch range was wider in the Japanese passage reading than the English one for four of the subjects. This means that these four subjects read the English passage rather monotonously in terms of intonation. Accordingly, we could suggest that the subjects in general were not so expressive in the English passage reading as in the Japanese passage reading

Using Taiwanese learners of English and American English speakers as subjects of her research, Tseng (1996) found out that Taiwanese have a narrower pitch range in comparison with American English speakers. She also states, “Both advanced (84Hz) and beginning learners (58Hz) of English show a significant narrower Fo range than that of Americans’ (112Hz), and the difference is greater between the beginning learners’ group and native American English speakers.

The results obtained in the present research coincides with Tseng’s, and strongly suggest that a language learner in general tends to narrow the pitch range as he/she reads or speaks a target language.

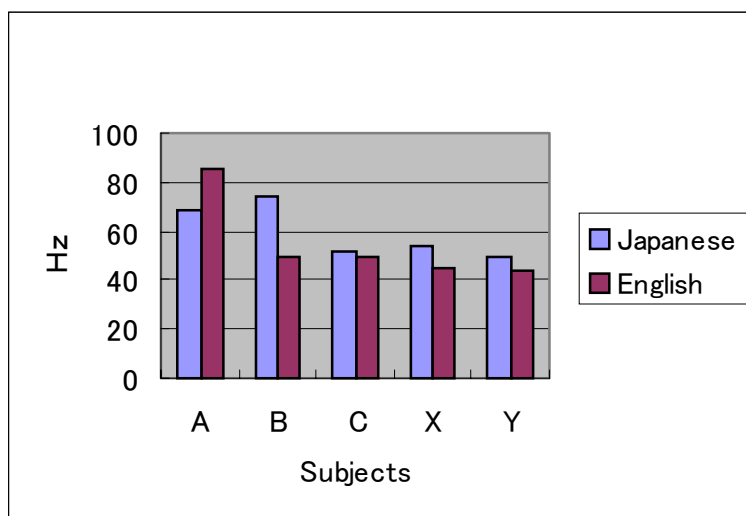


Figure 2. Comparison of pitch ranges

Concluding Remarks

The findings of this study imply that a language learner's attitude is reflected in prosody such as speech rates, pauses and pitch ranges when he/she reads a target language. I hope they will be useful for language teachers and researchers in teaching pronunciation of English, especially prosody and expressiveness.

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Appendix: Speech Material

English Passage

One day, Akiko and her mother were on their way downtown to see a movie. While they were waiting for a bus, they saw a foreigner. When the bus came, he asked the bus driver something in English. But the driver couldn't understand him. Her mother told Akiko to speak to the foreigner in English. He understood her English. Then Akiko discovered that he was going to see the same movie. She told him that she would guide him to the movie theater. He was very glad to hear that. She was also very happy to speak English with the foreigner.

Japanese Passage

ある日、明子とお母さんは、映画を見に町へ行く途中でした。バスを待っている間に、外国人を見かけました。バスが来た時、彼は運転手に何か英語で尋ねていました。しかし、その運転手は彼の言うことがわからないようでした。お母さんは彼女にその外国人に英語で話しかけるようにと言いました。彼は彼女の英語が理解できました。その時明子は、彼が自分達と同じ映画を見ようとしていると知りました。彼女は映画館に案内しますと、彼に言いました。彼はそれを聞いてとても喜びました。彼女もまた外国人と英語で話ができ、とてもうれしかったのです。

Some Keys to Moving from Bottom-Up to Top-Down Reading

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Abstract

Most inexperienced readers know only bottom-up strategies while reading. Such strategies confine them to limited resources such as the text, their grammar skills, and dictionaries accessible to them. This study shows how to implement ideas from Meaning Triangle, Case Grammar, Meaning Representation, Discourse Analysis, etc. to reading instruction so that students are more ready to adopt top-down strategies.

Bottom-Up Reading

Most beginning readers work toward the goals of finding the right sense of every word in a text, figuring out the sentential meaning by identifying sentence structure and putting word senses together accordingly, and finding the relationships between sentences with the help of transitions. By doing so, they stick to bottom-up models, according to which reading is mainly a process of “breaking the written code and... controlled by textual input and the reader plays a relatively passive role in the process.” (Harris & Sipay 1985) Readers adhering to bottom-up models always go from word level to phrases and then to sentence level. Their understanding of a sentence depends mainly on their understanding of all constituents. They tend to trust dictionaries for word senses. Once encountering a new word or cannot find the right sense, they give up and the comprehension process breaks down. According to Harris and Sipay (1985), bottom-up reading is essentially “a process of translating graphic symbols into speech during oral reading or into inner speech during silent reading.” They suggest that passive readers often do not do active syntactic or semantic processing. They apply listening comprehension skills after oral or silent reading and their reading often stops there. However, this is not the case with native speakers. Non-native readers are more inclined to adopt bottom-up models. The difference is that they depend on translation skills, not listening comprehension skills. They translate each sentence into their native language before any cognitive process can go on. That is, translation reading is essentially bottom-up.

Top-Down Reading

The success of bottom-up reading depends heavily on the number of new words and whether a reader’s dictionary skills and grammatical knowledge are good enough. A reader with limited dictionary skills and poor grammar is doomed to fail if he is reading a text with many new words and complicated sentence structures. Bottom-up reading confines readers to limited resources. However, if they know how to guess meaning out of context, find the main idea, and apply world knowledge, writing and communication skills to reading, they would find plenty of resources that might be overlooked before. In other words, they need to adopt top-down strategies. According to Harris and Sipay (1985), “in top-down models, a reader’s prior knowledge and cognitive and linguistic competence play key roles in the construction of meaning.”

It is noted that top-down reading enables readers to get access to more resources than bottom-up reading. However, if we assume that students understand this and they are willing to adopt the new strategies, there are still three problems for advocates of top-down strategies: how to change a reader’s old habits, how to help them adopt

the new ones, and how to help them to make sure that the meaning they construct is the right one. That's why we recommend that the training of top-down reading start from changing old habits and setting up criteria for self-evaluation.

The Problem of Understanding

For both native and non-native readers, the key problem in reading is that they don't know whether their understanding is correct or not. After tedious work of sense disambiguation and meaning construction, how do they know that they make the right choices and their interpretation of the text makes sense or it is exactly what the author intends to say? They need some criteria to tell them right from wrong. And this should be the core of reading training.

The following example shows that a non-native reader in Taiwan misunderstands a passage and his misunderstanding is detected when he is asked to translate the passage. We'll point out where he makes errors. The problem is how the student is able to find out himself.

The text: *So this lady walks into a grocery store and buys a package of chicken. She takes the chicken home. When it comes time to cook the chicken, she unwraps the package only to discover this isn't just any split breast/drumstick combo. Included in this package of chicken is...a chicken head.*

Romanized Chinese: You3 yi1 wei4 nu3shi4 zou3jin4 yi1 jia1 shang1dian4, mai3 le5 yi1 dai4 zhuang1 de5 ji1rou4, bing4qie3 dai4 le5 hui3jia1. Dao4 le5 zhu3fan4 de5 shi2jian1 ta1 ba3 dai4zi5 da3kai1,

Back translation: *"There was once a lady went into a store, bought a package of chicken, and brought it home. When it's time to cook, she unwrapped the package only to discover what was included in the package was neither chicken breast nor chicken drumstick. The package in which chicken combo was supposed to be packed should contain only a chicken head."*

The major deviation of the student's interpretation is mistaking 'an average chicken package that unexpectedly contains a chicken head' by translating it into 'a package containing nothing other than a chicken head.' The student must have missed the specificational meaning (see below) of any in this isn't just any. It's common for a student to miss the specificational meaning. We are curious about why the student should be satisfied with such a translation.

It is understandable that a non-native reader includes translation procession in his understanding process. It seems that for many non-native readers the understanding process is not completed until the text is translated, silently or not, into his native language. If a non-native speaker needs to translate a sentence into his native language before he is able to understand, we are curious about what happens in a native speaker's brain while he is reading.

In this study, some guidelines will be given to inexperienced readers in the hope that they can benefit from plenty of otherwise-neglected resources by adopting top-down strategies in their reading, that they can go beyond surface-level symbols to get hold of the meaning in concrete terms, and that they can form some criteria for evaluating their understanding.

Meaning Triangle

As Aristotle first observed, "Spoken words are the symbols of spoken words and written words are the symbols of spoken words." (*On Interpretation*). Ogden and Richards (1923) codified the relationships among words, objects and concepts as the meaning triangle (Fig. 1).

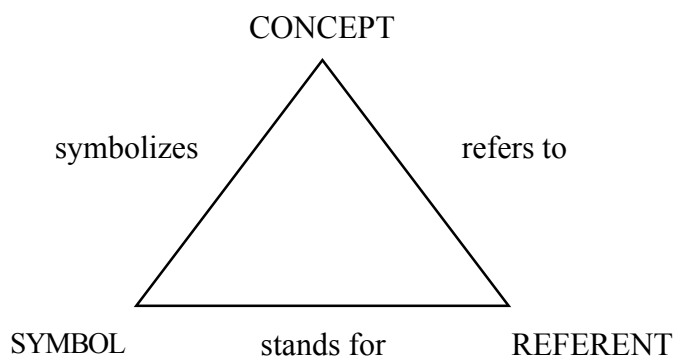


Figure 1. Relationship among words, objects and concepts

The left corner of the triangle is the *symbol* or *word*, which is the basic unit of language; the peak is the *concept*, *intension*, *idea*, or *sense*, which is the element of thinking; and the right corner is the *referent*, *object*, or *extension*, which is the element of the world.

When we read a sentence, the words in it are just symbols and we need to find out what those words stand for so that we can really get hold of the meaning. Dictionary definitions and their combinations provide us with intensional meaning or not-so-specific possible worlds only. In order to really understand, we need to be able to find their extensional meaning in the real world or from our imagination so that we will be able to perceive. This is the central idea on which criteria for the evaluation of understanding should be based.

Meaning Representation

It is commonly believed that meaning is too abstract to be put into words. Since words are only symbols, no utterance of words will be regarded as the real meaning, or the meaning without disguise. Paradoxically, if the combination of words will never be the real meaning of something, how can we express meaning in words?

Chen (1996) followed the AI tradition to propose a system of language-independent meaning representation that can be used in the interlingua proposed for an MT system from Chinese to English. In his study, three components are proposed for meaning representation: *referential*, *relational*, and *specificational*.

referential meaning: objects, events, time, place referred to by content words

relational meaning: relationships among referents

specificational meaning: number, definite/indefinite state, tense, aspect, etc.

Take the previous passage for example, the representation is outlined as follows:

Table 1. Representations from Passage

<i>Referentially</i>	<i>Relationally</i>	<i>Specificationally</i>
Event 1:	<i>walking (Lady F :: Store S)</i>	<i>present for past</i>
Object 1: <i>Lady F</i>		<i>a particular</i>
Place 1: <i>Store S</i>		<i>any grocery store</i>

Table 1. Representations from Passage (Cont'd)

<i>Referentially</i>	<i>Relationally</i>	<i>Specificationally</i>
Event 2:	<i>buying (F :: Chicken P)</i>	<i>present for past</i>
Object 1: <i>Lady F</i>		
Object 2: <i>Chicken P</i>		<i>a combo package</i>
Event 3:	<i>taking (F :: P :: Home H)</i>	
Object 1: <i>Lady F</i>		<i>mentioned before</i>
Object 2: <i>Chicken P</i>		<i>mentioned before</i>
Place 2: <i>Home H</i>		<i>F's home</i>

Chen's system of meaning representation makes a distinction between intensional meaning and extensional meaning by pointing out the specifications of referents. It's an effort to overcome the semantic barrier inherited in linguistic symbol systems. To define the case relation between an event predicate and its participant roles, Chen borrows ideas from Case Grammar.

Case Grammar

Since its introduction by Fillmore (1968), Case Grammar has been used to represent who do what to whom expressed in sentences. With the help of specificational and relational markers, the intensions of a predicate and its participants clearly refer to objects and events in the real or imaginative world. In other words, Case Grammar, in combination with Chen's system of meaning representation, can be a useful tool to help bridge the gap between linguistic symbols and meaning. Teachers can benefit from this because they and their students can start to talk about meaning in a more concrete sense and this will make reading more goal-oriented.

Writing Techniques

Most inexperienced readers adopt bottom-up strategies and their main concern in reading is to find the right sense of each word in the physical or mental dictionary. On the word level, they have only dictionaries as their resources. If any difficulty is encountered on the word level, the ambiguity certainly makes everything on higher levels more indeterminate. However, almost all words have multiple senses and we often need a context big enough to help disambiguate. A bigger context means a larger text unit, maybe a clause, a sentence or even larger. The question here is how a larger unit, say a sentence, whose meaning is still unknown can be a context clue for an unknown word in it. The solution is: we can always find other helpful resources.

Knowledge in writing is also useful for reading. We know that variety is an important element in good writing and a trained writer always sticks to unity, coherence, and development in writing a paragraph. In a structured paragraph, the topic sentence and its supporting sentences repeat the same idea. These are useful resources for reading comprehension. The same idea in the topic sentence may have a different realization from its repetition in the supporting sentences. Among the different expressions for the same ideas, we might not know some of them, but it is less likely that they should all new to us, if the text is not too difficult. In other words, such different expressions are sometimes very reliable context clues.

Cooperative Principle for Writing

Grice (1975) proposes a general principle, labeled “the cooperative principle”, which conversation participants will be expected to observe. This principle consists of four more specific maxims: quantity, quality, relation, and manner. We believe that writers are also expected to observe a general principle, such as the maxims of *relevance, clarity, logical, quality, quantity, consistence, existence* etc.

relevance: We expect all details to be relevant to the theme of the text.

clarity: A text should be clearly presented.

logical: If any two parts of the text is in conflict, there must be an explanation, or there must be something wrong with understanding.

quality: We expect an author well-trained and that he has good writing techniques and achieves good rhetoric effects.

quantity: Too many repeated words without good reasons is bad. Therefore, a variety of words or phrases expressing a same idea is expected.

consistency: The style or usage should be consistent.

existence: All referents should exist in the real world or at least imaginable.

World Knowledge and Communication Theory

A good writer always has an intended audience in mind. That means he is well aware of his intended reader’s knowledge and he makes use of his old knowledge to convey something new. We call these different frames of knowledge schemata. A good reader should be able to outline all schemata presented by the author. He always asks himself what the writer is trying to sell and what specific pieces of knowledge are used by him to make his point. With this in mind, the reader will go back to the text from time to time to check if he really understands the writer.

An Example of Goal-oriented Top-Down Reading

Bottom-up reading is basically linear or sequential: from words through phrases and clauses to sentences. Although backtracking occurs in bottom-up reading, it is comparatively rare. Similarly, context clues used by this approach are usually expected to be restricted to a local context rather than a global one. However, the main difference between bottom-up and top-down reading is that the former fails to activate many resources. The reader notices that some referents repeatedly mentioned, though in different words or phrases, that the writer tries to make his point out of familiar things (old knowledge), that there is a sequence of events logically connected, and that a good writer is expected to achieve clarity, variety, and consistency in his writing, etc. An example of goal-oriented top-down reading is given as follows to show how different resources are used to reconstruct meaning:

“So this lady walks into a grocery store	[lady] <walk> [store]
“and buys a package of chicken.	[lady] <buy> [chicken]
“She takes the chicken home.	[lady] <take> [chicken] [home]
“When it comes time to cook the chicken,	[lady] <cook> [chicken]
“she unwraps the package	[lady] <unwrap> [chicken]
“only to discover	[lady] <discover> [some event]
“this isn’t just any split breast/drumstick combo.	[chicken] <NOT> [chicken comb]
“Included in this package of chicken is... a chicken head.”	[pack] <include> [head]

If we read from the top, the maxims of *repetition*, *relevance*, *consistency*, etc. will help us find out that different expressions are used to represent the same referent and some expressions are closely related. Propositions reveal not only event referents but also case relations. To specify specificational meaning, we can appeal to grammatical markers, the maxims of *logical*, *quantity*, *quality*, and *existence*, and other modifiers of content words. The following listings show how the context and the maxims are able to help a reader to do sense disambiguation for unknown or ambiguous words and achieve the goal of finding extensions for textual expressions:

same referents: lady L <this lady, she, the lady, her>
 chicken <a package of chicken, the chicken, the package, split breast/drum stick combo, this freak of meatpacking history>

related referents: <package, combo, meatpacking>
 <chicken, split breast, split drumstick, head>
 <foul, shock, explosion of emotion, freak, nauseated, faints>

If a reader gets these clues and resources, a few unknown or ambiguous words should not keep him from understanding the text. The events are logical and clearly expressed — one lady buys a product, finds it defective, and has an accident. However, the reader needs to know something about chicken packing and that Americans do not eat chicken heads and American stores do not sell chicken heads. The point is, if a reader wants to fully understand a passage and appreciate the humor, he should do top-down reading. Then, he'll find plenty of resources, ready at hand to help him.

A Contrast

In this section, the back translation of a student's translation of the same passage shown in the previous section will be analyzed in terms of where he makes errors and we'll point out that they are related to bottom-up reading. The underlined words or phrases indicate errors in reading. And the explanations of the errors follow.

Back Translation of a Student's Chinese Translation of the Same Passage

"There was once a lady went into a store, bought a package of chicken, and brought it home. When it's time to cook, she unwrapped the package only to discover what was included in the package was neither chicken breast nor chicken drumstick. The package in which chicken combo was supposed to be packed should contain only a chicken head."

"Let's talk about a foul smell, then you can imagine the degree to which it was shocking. You can also imagine all the emotions that exploded to a full scale at this moment. This lady took a look at the strange-looking package and she had inside her a feeling of nausea. Then she claimed that her head hit the kitchen table and then she fainted. At last she was brought to life by a chiropractor."

Why the errors are made:

- | | |
|---|--|
| 1. <i>what was included in the package was neither chicken breast nor chicken drumstick ...should contain only a chicken head</i> | A chicken package containing only a single head is so unimaginable. But the student fails to find out. |
| 2. <i>the strange-looking package</i> | Nothing wrong about strange-looking. |
| 3. <i>she claimed that her head hit the kitchen table and then she fainted</i> | [terrible scene] fainted, bonked the table] is more likely. |

4. *she was brought to life by a chiropractor*

The chiropractor is not expected to be there to help.

We find that the reader has difficulty finding the right sense for some words. And he is not aware some events in his translation are not possible or illogical.

Guidelines for Reading

In this last section, a few guidelines are given as part of the conclusion. They should be helpful for teachers to help their students move from bottom-up to top-down reading. They also useful guidelines for readers to set up criteria for self-checking and enhancing their reading ability.

1. First reading or skimming is needed to get a general idea about a passage.
2. Unknown words and ambiguity are expected. Context is more reliable than dictionary definitions. Top-down reading gives context a broader sense.
3. Finding the right sense for each word is important, but it should not be the ultimate goal of reading.
4. A passage is expected to be about possible happenings and a writer's narration, exposition, or argumentation is expected to be logical and reasonable.
5. Indeterminacy is normal in reading and we need more resources to resolve it.
6. Use top-down strategies to explore all available resources. Reading is the implementation of a reader's common world knowledge, linguistic knowledge, communicative competence, reasoning, writing knowledge and so on.

In conclusion, we believe that reading is a parallel cognitive process. Only top-down reading will enable a reader to solve problems inherent to parallel processing. To help the students improve their reading, a teacher should make the reading training more goal-oriented, for example, working toward the goal of finding extensional meaning so that a more concrete or imaginable world will be visualized for the reader to judge whether it is possible or not. Furthermore, some criteria are needed to help students acquire the ability to do self-evaluation.

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Speech Technologies and Pronunciation Teaching

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Abstract

This paper addresses the problems of pronunciation teaching in Japan, such as native language interference, large classes, lack of specialists and methodological flaws. The presenter sees the solution of these problems in introducing electronic visual feedback, computer corpora and electronic dictionaries with sound files into a pronunciation class. The author explores how recent innovations in speech technologies allow students to overcome their former limitations. Computerization of Japanese education along with the rapid progress of speech technologies provide foundations for the new electronic era in pronunciation teaching.

Introduction

The rapid development of speech technologies, computing power and communications networking provide fantastic opportunities for computer-assisted teaching of foreign language pronunciation. These opportunities are becoming more and more intensively used for the teaching of both segmental and suprasegmental aspects of English pronunciation world-wide (Bagshaw, Hiller & Jack, 1993; Hiller & Rooney, 1994; Hiller, Rooney, Vaughan, Eckert, Laver & Jack, 1994). Teachers in many countries favour electronic aids in pronunciation teaching because multimedia personal computers are making it possible to present interesting material in a useful interactive way, they provide higher selectivity in material preparation than other educational means and they ensure valuable practice, feedback and communication with peers from other parts of the world (Roach, 1995).

Although computer assisted pronunciation teaching has been shown to improve the English pronunciation of Japanese learners of English (Anderson-Hsieh, 1996; Lambacher, 1996; Akahane-Yamada, Dermott, Adachi, Kawahara & Pruitt, 1998), in Japan the method still remains a rare research subject rather than a common teaching practice. The author sees the gross underdevelopment of computer-aided pronunciation teaching in Japan as a consequence of general problems with pronunciation teaching in this country.

Problems with Pronunciation Teaching in Japan

Japanese English language teachers frequently complain of the difficulties in improving the English pronunciation of Japanese learners. Their pronunciation performance is described as “in the best scenario placing unnecessary strain on the listeners and in the worst critically impeding communication” (Futatsuya & Chick, 1996: 15). Typically, first-language interference is held responsible for this situation (ibid). It is claimed that since many sounds and sound combinations of English are not found in Japanese, Japanese learners of English have difficulties in pronouncing them (Kenworthy, 1987). Yet, English has some sounds which are not commonly found in other languages, e.g. /ð, 3:/, and their acquisition is difficult for speakers of ANY other language. Since native language interference is an obstacle to English pronunciation acquisition for speakers of all other world languages, the sources of poor English pronunciation performance of Japanese learners are to be found not in the Japanese language, but in Japanese English language teaching.

It has been often observed that traditional English language teaching in Japan tends to give preference to the reading, writing and translation skills development over spoken language skills training (Wadden, 1993). The

aspect which has suffered most from the grammar-translation tilt in Japanese ELT is pronunciation. It is not taught in high school, and only very few private universities exceptionally offer a course in pronunciation teaching and/or English phonetics and phonology for English language majors. No institutions in Japan provide pronunciation training courses or MA degrees in pronunciation for teachers.

There are some other more specific problems with pronunciation teaching in Japan, for example, large numbers of students in a group, which makes a direct interaction between a teacher and students impossible. Not enough attention is given to fighting the effects of katakana transcription of foreign loan words, although with proper tuition these effects can be minimized (Makarova, 2000a).

Another major problem lies in the lack of original methodologies and the teachers' relying on the 'general recipes' made in the 'center' (in Philipson's sense of this word, Philipson, 1996). These 'universal truths' firstly take no account of the specific culturally-based learning needs and orientations of Japanese learners of English, and secondly, they frequently contain misrepresentations of the linguistic aspects of Japanese-English sound systems interference. For example, Accent and Physical methods ((Messum, 1998; Underhill, 1998) can hardly be applied to adult learners in Japan where students are known to be very shy ((Doydon, 2000). Some mistaken assumptions about the Japanese sound system and the difficulties Japanese students encounter while learning English can be found in Kenworthy, 1998, i.e. a claim that the sound /f/ is not found in Japanese.

The popularity of the communicative method often applied in Japan in its 'no drills, no separate pronunciation teaching' paradigm has also been shown to be harmful for pronunciation teaching (Makarova, 2000c)

Since pronunciation teaching is an unpopular area with very few specialists, it is not so surprising that computer-assistant language teaching does not develop adequately in a country with world vanguard speech technologies. The traditional segregation of science (+ engineering) and humanities (+ language teaching) in Japan contributes to the striking gap between high tech devices available in laboratories and the lack of their applications in pronunciation teaching.

What Speech Technologies Offer to Pronunciation Teaching

This section outlines the major directions for applying current advances in speech technologies to pronunciation teaching.

Electronic Visual Feedback, Automatic Scoring, Error Detection and Fluency Assessment

Electronic visual feedback (EVF) provides means of visualizing the acoustic features of the model pattern provided by the native speaker of English, stored in the digital form and retrieved at the moment of practice as well as of the pattern produced by the learner and their comparison. The model practiced can be either a certain sound in varied context or a syllable, a word (and lexical stress), a word combination (and a phrasal stress), rhythmical units, intonation units and chunks of spoken texts. By comparing the audio sound and visualized acoustical parameters of his/her speech token with the model ones, the student can attempt to make the closest approximation to the model pattern. For example, a spectrogram can clearly indicate whether a learner aspirates English /p, t, k/, or not (Lambacher, 1996).

A certain limitation of EVF systems is that the estimation of the proximity of the imitation to the model until recently has been done either by the teacher or by the student relying more on intuition than on any objective criteria. The mere existence of the difference in acoustical parameters between the model and its imitation does not necessarily indicate that the imitation is bad. Due to strong variability of speech acoustics including inter-speaker variability, one native speaker cannot produce two repetitions of the same speech item without a difference in their acoustic parameters, and no two native speakers can ever produce acoustically identical speech samples. This makes testing of pronunciation improvement very difficult as well.

Recent innovations in speech technologies allow to overcome this shortcoming by providing automatic assessment of pronunciation quality, speech fluency and automatic error detection (Makarova, 2000b) whereby the assessment is based on speech recognition algorithms. Some new speech software products are truly interactive: they report to the learner not only the location and kind of mistake made, but also give recommendations for its correction (e.g., CALL products produced within the framework of the Interactive Spoken Language Education, <http://nats-www.informatik.uni...erron/ISLE/public/D14/D14.html>).

Including electronic visual feedback into a pronunciation class requires the employment of some speech processing packages. About a decade ago, they mostly existed for UNIX operation systems or as very expensive hard- and software devices (like Kay elemetrics' Visipitch, or CSL), which made their applications hard. Nowadays, a number of speechprocessing software is available for free on the web. A few examples are given below.

Wavesurfer: <http://www.speech.kth.se/wavesurfer>

CSLU Speech Toolkit: <http://cslu.cse.ogi.edu/tools.htm>

Praat: <http://www.fon.hum.uva.nl/praat>

Electronic visual feedback and automatic scoring allow the teacher to conduct intensive pronunciation practice with an unlimited number of students, which is very important in the Japanese learning environment. Pronunciation teaching sessions can be designed not for "theoretical" students of English but geared specifically towards the difficulties Japanese students experience with English pronunciation (including katakana transcription, consonant clusters, etc.).

Computer Corpora and Elecronic Dictionaries with Sound Files

Computer corpora are widely used in ELT mostly for studying vocabulary and grammar (Leech, 2000). Their usage for pronunciation teaching has been less popular simply because most computer corpora dealt with written texts, but not with sounds. Nowadays more and more phonetic databases are becoming available. For example, Japanese Maptask corpus will be released in a few years, and the release of the International Corpus of English (ICE) is expected this year. ICE is developed by teams of researchers from many countries and it includes spoken samples from all the English speaking countries, such as Australia, Canada, East Africa, Great Britain, Hong Kong, India, Ireland, New Zealand, the Philippines, Singapore, Sri Lanka and the United States.

More information about the corpus can be found at <http://www.ucl.ac.uk/english-usage/ice-gb/index.htm>

The release of easily available corpora and databases of sound files will have important consequences for the ELT not only in Japan, but world-wide.

1. Pronunciation learning becomes more customized regarding the individual difficulties each individual learner is experiencing with foreign language pronunciation. Parsed structures of corpora allow the user to perform a search for a particular item, downloade and save files with this item enabling the user to hear and practice the item he/she is interested in. Weak and strong forms of English 'grammar words', for example, can be searched for and practiced in different contexts.
2. Pronunciation learning becomes more customized regarding the accents of English taught to non-native speakers. Availability of a large amount of speech samples coming from different regions of the world can re-focus the energy of pronunciation teachers from pointless discussions of which pronunciation model is better, whether British or American Engsih should be taught, whether RP is dead or not, whether it should be called RP, BBC English or snobs' English into training the learners' ears to the rainbow of accents of the world Englishes.

Learners would be able to select, listen to and practice English pronunciation of the region they have special interest in (for example, a country where they are planning to go on a study-abroad programme. CD-ROM English dictionaries with sound files will make it possible for foreign learners to listen to the correct pronunciation of a new word, which will help to memorize it and make students less dependent on phonetic transcription.

Communication on the Net

Language teaching exchange programmes between students from different countries have been earlier limited to written texts or video records exchanges. Since international telephone rates are too high, it seldom happened that the voice of the correspondent could be heard 'live.' E-mail and web allow nowadays almost instant and cheap ways of passing over relatively large amounts of spoken speech to overseas English language exchange partners. Some private schools in Korea and the Philippines have already engaged in exchange programmes with live video and sound transmission of peers' conversations via Internet. This task tests the phonetic comprehensibility of a learner's speech and encourages him/her to improve pronunciation.

Online Pronunciation Courses

Although so far too many technical problems prevent online pronunciation teaching courses, they will probably become a reality in the near future since models for such courses outlines have already been developed (Donahue, 1999).

Prerequisites for the Development of Computer-Assisted Pronunciation Teaching in Japan

A number of the following recent developments in Japanese education appear to be favourable for the development of computer-assisted pronunciation teaching.

Introduction of English in Elementary Schools

An early exposure to English pronunciation before the critical age will allow less painful and more efficient acquisition of native-like English pronunciation by young Japanese learners.

Computerization of Japanese Education

Japanese ministry of education has allotted a considerable budget for introducing computers into schools for multiple purposes including English language teaching. It would therefore become possible to have the material basis for the computer-assisted pronunciation teaching.

More Freedom is Given to Schools

More freedom provided to Japanese schools by the Ministry of Education which used to strictly control curriculum can allow teachers to include pronunciation teaching into curricula.

Formation of Professional Structures

Although the Japanese Association of Language Teachers does not have a pronunciation teaching special interest group, these functions are partly performed by the recently formed English Phonetic Association of Japan and Pronunciation and Transcription Association of Japan. Both structures provide opportunities for the professional development and exchange of ideas between pronunciation teachers and put the emphasis on the value of computer-assisted pronunciation teaching.

Integration of Asian Efforts

Computer-assisted phonetics and pronunciation teaching in Europe have been coordinated over many years within the framework of ERASMUS and SOCRATES programmes as well as to a lesser degree by IATEFFL Pronsig (which has its sessions exclusively in the ELT 'centre' making it hard for teachers from other parts of the world to participate). Asian pronunciation teachers had been therefore in isolation until a recent exchange of phonetic and pronunciation teaching ideas between Japanese and Korean researchers was started by the English Phonetic Association of Japan and the Phonetic Society of Korea. It is possible to expect that this exchange would lead to co-operation in computer-assisted pronunciation teaching as well since it is one of the central issues in the conferences held by researchers and teachers from the two countries.

Privatization of Speech Laboratories

Beginning with 2001-2002, a number of Japanese National Research Institutes are undergoing re-structuring and privatization accompanied by the elimination of the Agency for Integration of Science and Technology. Taking an optimistic look at the prospects it is possible to expect that in searches for funding, speech laboratories can become more attentive to the needs of education, including language teaching in general and pronunciation teaching in particular.

Cultural Factors

Cultural orientations in Japan are favourable to pronunciation teaching since Japanese are known to love computers, playing on the web and TV games. Teachers who have employed EVF in their pronunciation classes invariably report positive reaction from their students (Lambacher, 1996; Anderson-Hsieh, 1996). Designing pronunciation training exercises as games (as was done by Kay elemetrics for the CSL aimed at teaching pronunciation to hearing-impaired children) can make the subject very popular with Japanese learners.

Implications of Computer-Assisted Pronunciation Learning for Japanese ELT

Wide applications of computer-assisted pronunciation learning can possibly affect Japanese ELT in a few ways.

The Place of Pronunciation in Japanese ELT

The ability to use computers in a pronunciation class and the tangible improvements in pronunciation with EVF, computer corpora and databases will make pronunciation classes more popular with students and will consequently raise the prestige of the subject in the Japanese ELT.

The Role of Non-Native Teachers

The role of non-native teachers of English is currently a very widely discussed subject in ELT. Although non-native teachers are by far in majority, they are frequently looked down upon by students despite the existence of ELT areas where non-native teachers are superior to native teachers (Lee, 2000; Takada, 2000). Non-native teachers often have to suffer from derogatory attitudes because of the traces of native language accent remaining in their pronunciation (*ibid*). Computer-assisted pronunciation teaching enables non-native teachers to get rid of the inferiority complexes since their role changes from the provider of a pronunciation model (a role they can be uncomfortable with) to the organizer of the learning process. By giving instruction on the use of the computer software in the students' native language and leaving them to practice with the native models a non-native teacher can get better results than a native teacher.

The Role of Language Learners and the Choice of Teaching Methods

Computer-assisted pronunciation learning enables and requires a student to take the responsibility for his/her pronunciation progress into his/her own hands. The amount of training, the search for practice materials, the choice of the variant of English and of the skill to practice can be regulated by the learner depending on the individual abilities, orientations and preferences. In this way, computer-assisted pronunciation training encourages active learning methods.

Conclusion

Pronunciation teaching not only in Japan, but world-wide is now in the state of transition, whereby the old methods are felt to be inadequate, and the new ones have not been found. Many teachers are feeling the necessity of 'bridging the gap' between 'getting the sounds correct' and 'getting the message correct,' in other words of transferring pronunciation accuracy into everyday communication (Grant, 1999). Computer-assisted pronunciation teaching is one of the strongest supports in the construction of this bridge.

In Japan, cultural orientations of the learners as well as many other social factors are favourable for the introduction of computer-assisted pronunciation teaching. Its wide application can help to solve a range of problems with pronunciation teaching as well as improve currently poor English pronunciation performance of Japanese learners of English.

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Strategic Effect of Shadowing on Listening Ability

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Abstract

This paper is part of the study that tries to clarify the effect of shadowing as a training method to improve the EFL learner's listening comprehension. The aim is to examine the hypothesis that shadowing tends to work more strongly for the lower level of learners. The data from Tamai (1992)'s longitudinal experiment, in which shadowing and dictation were compared, was used for the analysis. Both experiment and control groups were split into three levels according to the initial listening proficiency. MANOVA was conducted on the results of pre & post listening tests. Interaction was confirmed among the results of shadowing groups; ($F(1,84) = 50.55, p < .01$). Further analysis confirmed the largest improvement in the lower group, a meaningful improvement in the middle group and a moderate level of improvement in the higher group. Meanwhile, no such tendency was seen in the dictation groups. Thus shadowing's bias effect toward the lower group was confirmed.

Introduction

When language teachers discuss listening, instructional focus is usually on understanding the meaning. Thereby, the methodologies used in teaching listening tend to be designed based on the question of "how much or how accurately students understand the meaning of the given messages."

The process of listening comprehension, however, constitutes a variety of processes where different cognitive systems function interactively. Processes here mean temporal storage of the incoming sound, prosodic pattern matching with the phonological database, syntactical analysis and semantic analysis. Some are knowledge-based, some are skill-based, and others are strategy-based. This means listening instruction should be possible tapping different aspects of the multi-dimensional listening processes. There are many doors to enter, and teachers need to know which door they are opening for students. This research examines the importance of tapping the strategic aspect of listening.

Two Different Types of Instructions: Dictation and Shadowing

Dictation is a form of listening task in which students hear the speech, memorize it and then write it down after a short interval. As Ur (1984) points out, it is useful for teachers because they can check accurate perception and comprehension as well as spelling. In this sense, dictation is rather meaning-based.

Shadowing, on the other hand is defined as follows: the act or task of listening in which the learner tracks the heard speech and vocalizes it as exactly as possible while listening attentively to the incoming information (Tamai: 1997). The focus is on the accurate reproduction of the sounds, therefore it can be considered as more skill based, or strategy-oriented. Efficacy of shadowing as a tool of teaching listening has been introduced and discussed by Yashima (1988), Tamai (1992) and Murphy (1995). Tamai confirmed its effect after a longitudinal experiment in which two of the above methods were compared. Later, a possible presence of interaction in between the results of the learners of different listening proficiency was suggested by Yanagihara (1995) and Tamai (1997), but neither has confirmed it on the data.

Purposes and Research Questions

The purpose of the research is to examine if there is any difference between the effects of shadowing and dictation. Particularly, the focal point is whether shadowing has a bias effect toward the learners in the lower group. The possible difference with the effect could underlie the presence of the strategic effect on the ground that the effect on knowledge would work rather equally onto all the groups.

Hypotheses are as follows.

1. There are different tendencies within the effects of dictation and shadowing.
2. There is a tendency for shadowing to work more effectively for learners of lower proficiency than for those of higher proficiency.

The Study

Procedures

Tamai's (1992) data was used in this analysis.

Subjects: Ninty high school students (2 classes of 45 students). Although original participants were 94, the data of the highest students and the lowest students in each respective group were dropped to secure proper balance between the two groups. ANOVA was conducted on the scores of the pre-test and no significant difference was observed; ($F(1,84) = 0.027$).

Treatment: Shadowing was used as the primary listening exercise to the experimental group and Dictation was instructed to the control group. Both groups received instruction once a week for 50 minutes. Same listening materials were used for both groups and the time given to listening was controlled. SLEP (Secondary Level English Proficiency Test) listening test form 1 was used for both pre & post test to measure the change of the listening proficiency.

Research Design

For the purpose of examining effects on the learners of different proficiency levels, each group was split into three levels: upper, middle, lower, according to the results of the pre-test. Three way multivariate analysis of variance (MANOVA) was conducted on the data; Method (2) x Grouping (3) x Testing time (2) with repeated measures on the testing time. Scores of SLEP listening test given before and after the treatment are dependent variables.

The Results

The results of three and one-half months of treatment involving listening are shown in Table 1.

Table 1. Manes and SD of Pre and Post Tests

Methods	Shadowing			Dictation		
Levels	Upper	Middle	Lower	Upper	Middle	Lower
n	11	17	17	17	17	11
Pre-test	49.1	42.1	35.4	47.6	41.9	37.2
SD	(3.6)	(1.3)	(3.2)	(2.9)	(1.3)	(2.4)
Post-test	50.7	47.0	44.7	49.4	42.7	38.2
SD	(2.3)	(5.9)	(5.9)	(4.6)	(4.7)	(6.2)

Graphically, the above results are:

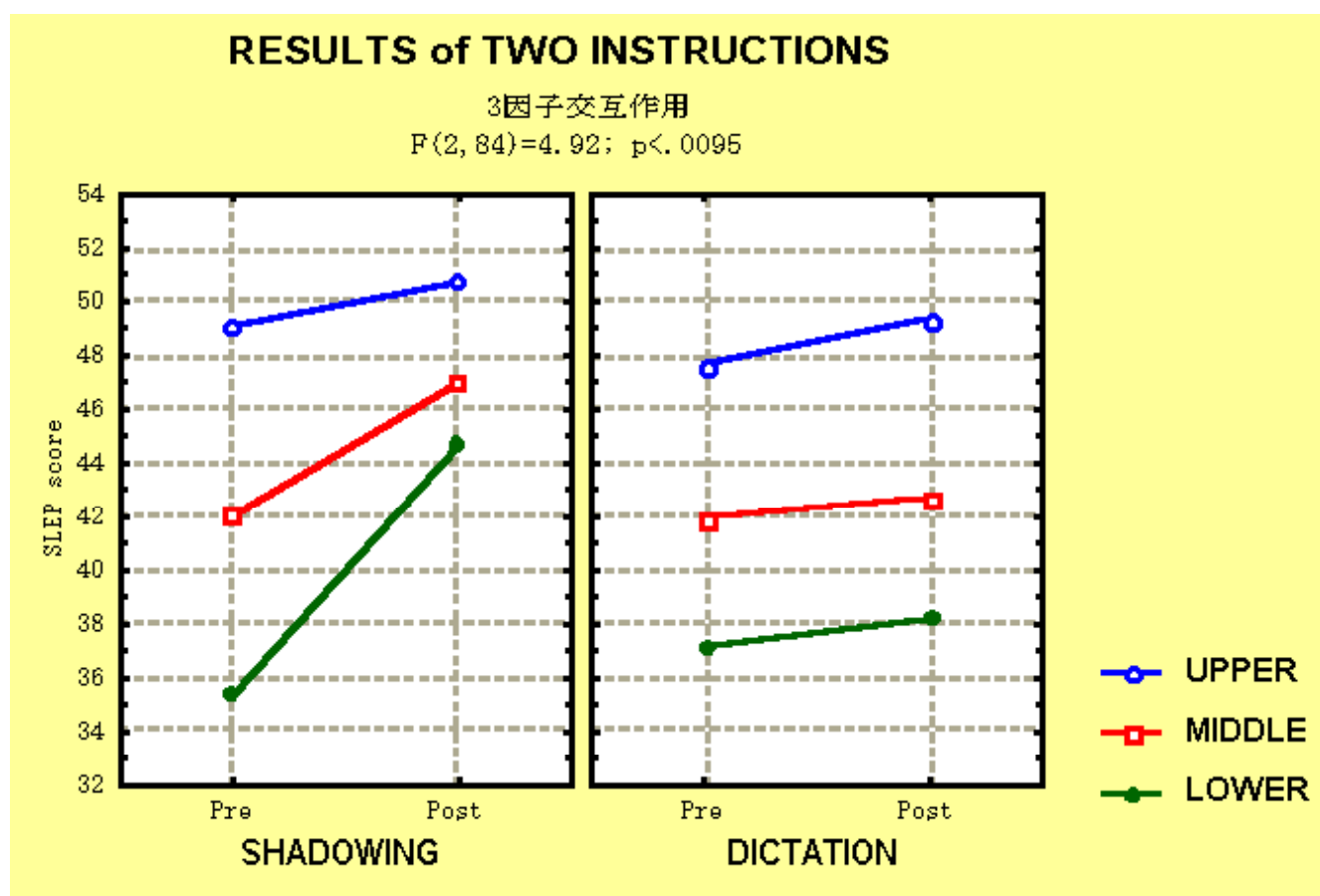
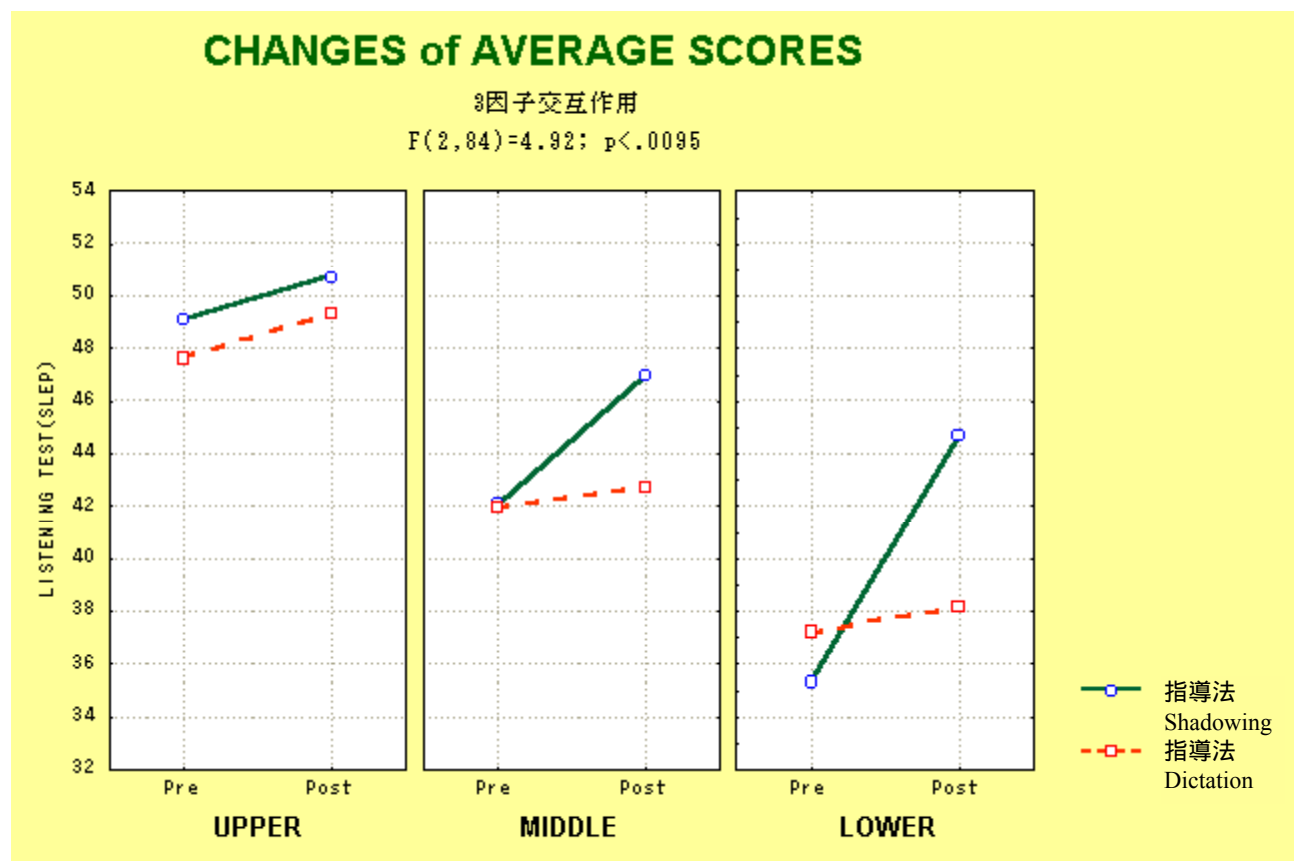
**Figure 1. Results of the Two Types of Instruction**

Table 2. Multivariate Analysis of Variance

Factors	df	SS	MS	F	
1(Method)	1	170.468	21.143	8.063	**
2(Ss' level)	2	1438.125	21.143	68.020	***
3(Pre/Post)	1	451.199	12.035	37.489	***
1 x 2	2	3.498	21.143	.1655	ns
1 x 3	1	186.100	12.035	15.463	***
2 x 3	2	42.724	12.035	3.550	*
1 x 2 x 3	2	59.222	12.035	4.921	**

ns * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

The result of MANOVA confirmed the presence of interaction, ($F(2,84) = 4.92, p < .01$). Figure 1 indicates the possible existence of interaction in the shadowing group, while three lines in the dictation group look almost parallel with each other. As the second step, further ANOVA was conducted on the results of each group. While no interaction was observed with the dictation group with ($F(1,84) = 2.40, > .10$), the results of the shadowing group presented interaction with ($F(1,84) = 50.55, < .01$). Thus, the presence of interaction with the effect of shadowing was confirmed. Now, in order to specify at which level shadowing has a bias effect, examination at each proficiency level was carried out one by one. Graphics were redrawn for the convenience of the examination.

**Figures 2. Changes in Average Scores**

For the upper level, no interaction was seen with ($F(1,84) = 0.0013, > .10$). Simple main effect of pre/post tests showed a meaningful tendency with ($F(2.84) = 3.100, 0.1 < p < 0.05$), indicating a moderate improvement regardless of the method.

For the middle level, an interaction was seen with ($F(1.84) = 6.159, < 0.05$). Further examination on the results of pre/post tests of each group was carried out. While no significant difference was found with the dictation group, shadowing group presented a meaningful difference with ($F(1.84) = 17.243, < 0.001$).

For the lower level, a clear interaction was observed with ($F(1.84) 19.358, < .001$). Although no significant difference was seen with the results of the dictation group, a meaningful difference was confirmed with the results of the shadowing group:

$$(F(1.84) = 61.78, < 0.001).$$

Discussion

The presence of interaction between the results of shadowing was confirmed, while no such tendency was seen in the dictation group. This means that the two methods have different effects tapping different aspects of the listening ability. Further analyses on the discovered interaction show that shadowing worked more strongly toward the learners of the lower level than to those in the higher level, while no such tendency was observed in the dictation .

Hypothesizing acquisition of a strategy or a skill that the learners of the lower level didn't possess while those of higher level did before the instruction may account for this phenomenon. Since shadowing is simultaneous reproduction of the incoming sound, the possible acquired skill should be something that improves subvocalization: the phonological coding skill. The practice of repetition facilitates phonological coding on the articulatory loop, and the increase of available phonological information leads to better comprehension.

Thus, shadowing is distinctive from other knowledge-based methods in that it taps the strategic aspect of the whole listening act as phonological coding skill. This explains the emergence of quicker improvement compared with other methods. In this sense the continuous training of shadowing has a crucial importance in the development of listening skill.

At this stage, it is not yet possible to specify the characteristics of this particular strategic effect in detail. Further research that examines the change in various aspects of listening skill is waited.

The author concludes that the results and analysis suggest the following tendencies.

1. Shadowing and dictation work on different aspects of listening abilities.
2. Shadowing presents a bias effect towards the lower level of EFL learners.
3. It is considered that learners at lower levels have acquired some new listening skill which those of the higher levels already have.
4. It is considered that shadowing works strongly on the strategic aspect of listening.

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Streaming Audio And Video

—The End of the Traditional Language Lab—

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Abstract

Digital Services will replace traditional services in language resource centers within the next decade. The conversion of analog audio and video materials and the distribution of the resulting digital data via servers and networks to LANs and WANs has been started in many institutions. The “streaming” and “file-shared” delivery of audio and video makes the simulation of the traditional language resource center on the network possible. The speaker will present Dartmouth’s approach to the new technology and provide details about the complete digital lab.

Discussion

The “traditional” language lab has been with us for more than two generations. Its basic functions, playback of a master track, recording of a student's voice, and successive playback of master and student for comparison purposes have been found useful in the acquisition of second languages even with the many changes in methodologies of instruction that took place during the last fifty years.

“Traditional” language labs have also become enhanced and more effective over the years through the exploration and refinement of the technology. The last ten years have seen more changes and refinements than the period of the preceding 40 years. Vendors have attempted a combination of mechanical and digital design to provide functionalities that had been asked for by instructors and learners for many years. Among them repeated and precise access to specific points on an audio tape, simplified user interfaces, better interaction between consoles and groups of users, improved monitoring capabilities and more.

“Traditional” language labs also used to be the liberal arts college's claim to “high tech” instructional facilities—often prominently printed in college brochures showing smiling instructors and students learning languages in a breeze by assimilating and digesting in laboratory environments. Nowadays computer labs decorate the pages of glossy college brochures for similar “pr” purposes. We need to remind ourselves that language learning and teaching can be assisted by technologies of all kinds. This assistance can be successful, if its function is clearly understood and implemented. Listening, speaking, reading, and writing are the four areas of highest concern to instructors and learners and the “traditional” language lab's role in these areas was—I believe—never explained in a satisfactory manner.

I have a suspicion that very few instructors understood the role of the language lab clearly and never made any real attempts to integrate the lab in their courses in ways that were meaningful and useful to their students. We have seen many language labs with enormous amounts of materials operating completely independent of classroom instruction—with learners simply picking materials or asking for materials to check their usefulness. This way, learners used the language lab very efficiently—especially when working individually.

Success of a language lab, we can assume, depends very much on the types of activity, on its pace, and on its relevance to classroom or individual instruction. At Dartmouth College we have had some islands of computer assisted language instruction—obviously text-based—since about 1979. Its usefulness was never demonstrated through scientific investigation. But the fact that students (without being asked) are still doing some of the exercises of what is often called the “drill and kill” type is indicative that students believe in their usefulness. With the advent of a campus-wide network in 1983 and the introduction of the Macintosh computer for every student and every instructor, the first possibilities for providing sound and moving images via the network was first discussed in 1987 but it remained a dream until opportunities for first implementations arrived in the early nineties. We saw QuickTime videos in stamp-sized windows for the first time in 1989. We were obviously taken by these technologies and their potential for improving and enhancing language instruction. In 1990 we wrote our first big proposal and, only ten years later, in the year 2000 we are running what we call “parallel technologies” with a complete “real” analog lab as well as a “virtual” lab providing streaming services and file services for instructors and learners.

Our traditional technologies include audio cassettes, video cassettes, and laserdiscs. The new technologies have brought computers, CD-ROMs, compact audio disks, and DVD disks into our facilities. Most of these media “containers” can be replaced by streaming media, if we understand clearly what streaming media can do and what they cannot do.

Those of you who have had some experience with streaming media already know that it takes a little while to connect from a client to the server and receive a stable stream. This connect time can range from 5 seconds to about 12 seconds. In other words, if you click on the button, it will take that time to deliver stable sound or video. *This is not a problem when streaming audio or video replaces delivery from an audio cassette, or a video cassette or similar sources. This turns into a great problem in interactive applications where the user expectation is different and assumes instant delivery of media upon touching a button on the screen.*

Keeping this fact in mind, streaming audio and streaming video will not kill the traditional language lab but augment it very nicely in areas that require delivery of video as well as audio in larger segments that do not require instant interactivity.

But not so fast, not all streaming services are the same, and some streaming services are not necessarily better or worse than others, but some streaming services are more flexible than others.

We gambled on Apple's QuickTime technology, assuming that this technology was so good that it would definitely survive the predicted downfall of the company. Well, the company did not fade away and QuickTime is very much alive and very much in use. The QuickTime technology makes it possible to put one file on the server and serve it as streaming media while simultaneously using the same file for those clients who need instant access via file sharing. Serving files via file sharing does increase bandwidth, but in a good 10BaseT environment, this is not a problem.

In other words, we are talking about a replacement of traditional analog services with digital services delivered to a lab as well as to classrooms, laboratories, and dormitory rooms. In our implementation of these services we were guided by a number of expectations and requirements that would establish not only similar but improved services at a lower cost. Among these were:

1. The promise of access around the clock to most audio and video materials—circumventing the limited opening times of the language resource center.
2. The promise of high reliability of digital services through server redundancy and archiving.
3. The promise of equal if not superior audio quality. Our users had been complaining for years about generational deterioration. Digital services would allow us to consistently maintain at

- least the quality of the tape masters provided by publishers or of our own digital audio recordings.
4. The promise of precise access to sections of the tape. Language tapes are often 30 minutes long and precise access to certain sections—despite mechanical or electronic “bookmarking” on certain lab machines—is at least inconsistent. Editing these tapes into separate audio files permits students to access exercises in accordance with their workbooks precisely and consistently.
 5. The promise of multi-platform delivery. Our network serves PCs and Macintoshes at a ratio of about 50/50. A solution had to be found that allowed us to serve both types of clients without adjustments to their machines or adjustments to our files on our servers.
 6. The promise of future compatibility. Digitizing existing analog materials takes time and costs money. This is an investment that can’t be repeated every other year for a change in file formats. We had to be very careful in selecting file formats that promised conversion possibilities for future formats. This is somewhat of a gamble, because even today we can’t be absolutely certain that our files will always be compatible, upgradeable, and convertible. (We learned this lesson at the beginning of our production when we had to redo close to 4000 files because of a mistake in processing.) Industry standards of today are not necessarily the industry standards of tomorrow! We decided for Apple’s QuickTime container standard, primarily for reasons of cost and technical promise. The server code (Darwin) is free and can be compiled for Linux, Unix, Windows NT/2000, as well as for OSX. The minimal client (QuickTime Player) is also free for PCs as well as for Macs. In addition, Microsoft’s MediaPlayer works equally well as a client. The only drawback at the moment is the inability of the server to handle MPEG-encoded materials. (Rumor has it that Apple will release an update of the Darwin code in October of 2000.)
 7. The promise of distance education. My institution is not involved in distance education. But a project of these dimensions should not be conducted outside the mainstream. We kept an eye on network delivery not only locally but via the internet. We discovered early on that audio delivery is no big issue, since it does not require much bandwidth. We also experimented with video delivery and decided that we should not lower the quality of our delivery for the internet. Instead, we would wait for better compression and delivery methods while continuing with high bandwidth LAN delivery at 150 to 180 kilobytes.
 8. No “but’s” and no “if’s” we committed ourselves to an implementation of services that would be fully transparent to the users. When we first opened up the service, we provided the complete selection of language tapes that were accessible via analog services in the language resource center.
 9. The promise of complete elimination of analog services. The only issue that prevents us from eliminating the analog services at this moment is one piece of missing software—the precise simulation of the traditional lab cassette machine that allows simultaneous playback of master and record track. This piece of software is in development.
 10. The promise of higher cost-effectiveness of digital services. This is a complex issue, since delivery is accomplished beyond the physical restraints of a language resource center. The eventual phase-out of cassette machines and the phase-in of computers will reduce costs. Storage space can be dramatically reduced by using digital media for storage (CD-ROMs). Servers do not represent a huge initial investment. Huge hard drives last about five years and can be replaced within predictable schedules and budgets. Most of the cost is actually assumed by the end user through his/her investment in a personal computer. There is, of course, the cost of the network and its maintenance—but that is part of the institution’s global infrastructure investment and the use of it by the clients of a language resource center is probably minimal when compared to other disciplines.

11. The upgrading of personnel. The times of high speed cassette copying are over. The staff of language resource centers needs to be able to handle all aspects of digitizing, server maintenance and more. There is a need for retraining personnel or coming to terms with sharing personnel and resources across the campus. When we began our implementation of digital services we made our needs known and collaborated and cooperated whenever and wherever possible.
12. The end of a language resource center as a space for languages only. More than 50% of the machines in our lab are computer workstations. These stations are general purpose stations that can be used for all kinds of activities in addition to language-learning activities. Early on we changed our philosophy towards accepting all students and faculty into this lab. We do handle some of the needs of film studies, art history, communications, and drama. We cooperate with other service providers on campus when it comes to availability or lack of server space.
13. The promise of better space utilization. We realized early on that users of the language resource center would have different demands on the center than our former beginning and intermediate language students who just worked with audio tapes. Now we see the sophisticated user who asks for specific materials, CD ROM packages, assistance with word processing in LCTLs etc. We have gained space from eliminating audio cassette stations. But we have filled this space with computer workstations. We could theoretically get by with less space now, but this is undesirable in our situation.
14. The promise of a significant impact on teaching and learning. Students have become heavy users of the network based materials. Attendance in the physical lab has dropped to about one third of our former numbers. But we have not lost these students. When we check the server logs we see students working or listening all the time including during the night as well as during the day. Instructors who teach in electronic classrooms are catching on to the fact that they can bring up audio and video during their classes in an instant. This has changed many instructors' attitudes towards our materials to the effect that they 1) are beginning to realize the usefulness of them and 2) are beginning to hold students accountable for the work they do over the network. We'll probably have to wait a few years to gather real data.

The Production of Materials

Time does not permit to go into great detail about our production. We started using off-the-shelf software and standard equipment from day one. For sound production we used a standard Macintosh with SoundEdit Software. This type of software can record in various formats in stereo and in mono and allows easy editing of sound files. Easy editing in this case means trimming off the blank noise up front and at the end of each file. SoundEdit also allows us to normalize our files as to their db level. (Mass-produced publishers' audio cassette tapes are sometimes very poor!) We recorded in compact audio disk quality. We saved files in QuickTime format and compressed with Sound Converter using the IMA compression. That brings the file size down to 5k per second for mono and about 10k for stereo. These files are playable on both platforms. Today the process is simplified. We still use SoundEdit, save as QuickTime, and then "hint" and compress the file through the "Export" choice of QuickTime Pro. The resulting file is fully compatible and can be mounted on all servers, including the QuickTime streaming server (Darwin).

The production of digital video is more complex. In this area the technology is still evolving and in 1997 there were not too many choices except for MPEG 1 video at reasonably quality and QuickTime video with Cinepac producing results that were not acceptable for our purposes. Another complicating factor was (and still is) the inability of the QuickTime streaming server to handle MPEG files. We tried the Silicon Graphics Cosmos server—but the promised client for the Macintosh was never delivered. So we gave up, opting instead for "file-served"

MPEG video files for the time being. We tested and discovered that we could handle at least 15 simultaneous clients on both MediaPlayer and QuickTimePlayer on different platforms—and that was enough for our purposes.

Today's situation is different. Sorenson encoded video can be served as streaming video from the QuickTime server to both platforms and allows lower bit rates than MPEG at very good quality and is better and easier to edit. We capture video from all analog sources with a Sony Media Converter box connected via FireWire to a Macintosh G4 machine running Final Cut Pro. The resulting huge file is compressed and processed with Media Cleaner Pro and then moved to the QuickTime server. Production time is between 20 to 30 hours for one hour of video! Final bit rates are around 150 - 180 kilobytes per second.

The Delivery of Materials

We did not want to invest into a proprietary systems at great cost. We began with off-the-shelf AppleShare, NT, and OSX servers, and added a Linux Server a little later. We upgraded our NT Server to Windows 2000. All servers were configured by us. Servers are connected to the network via a switched 100BaseT into the backbone. Today we are running three servers to provide 1) web delivery (OSX), 2) Mac/PC file sharing delivery (AppleShare IP/6.3, and 3) Mac/PC file sharing delivery (Windows 2000). This gives us triple redundancy.

Backups of Materials

All our materials are on duplicate CDs that allow us to restore the server fairly quickly. We use two 8x speed burners and purchase CD media in bulk. Only the system components are backed up on a regular schedule.

Monitoring

We have monitored up to 70 simultaneous clients on our two main servers. The usual server load is between 10 and 20. Peak Times are in the middle of the night and early in the morning. Users are equally divided between in-lab users and outside (dormitory users.).

Management

Our servers contain fairly consistent directories for the individual languages with sub-directories for audio, video, and “other” files. Uploading of data is accomplished via the network from production machines or via CD-ROM from the archive. Part of the web server (OSX) is visible as an AppleShare partition and also very easily handled from any Macintosh or PC (AppleShare IP 6.3 is compatible). The directories (see Fig. 1 and 2) are rebuilt automatically after entry of a very short line of code in the terminal window of the server machine.

Location And User Interface

For the last four years we have kept a consistent naming and location practice for our services on the network. (Dartmouth has more than a 100 zones in its network!) Freshman who buy their computers through the Dartmouth store will find an alias (“shortcut” in PC-lingo) on their machines when they first start it up in their dorm rooms. The alias will take them to a place on the server that has a list of all languages. After that they are on their

own. The student assistants in the language resource center are also capable of sending this alias via email to users who believe that they have problems. This alias will send students directly to what is visible in Figure 1 – file sharing services delivered via AppleShare. The Windows interface is similar.



Figure 1. List of available languages

Students who want to use the streaming services via a web interface are given an audio URL and a video URL. The interfaces are provided in Figure 2—for audio and in Figure 3—for video.



Figure 2. Audio interface



Figure 3. Video interface

Restricting Access

Copyright permissions sometimes require us to provide passwords and/or restrict the number of simultaneous users for certain types of materials—particularly video materials. We have not found the perfect solution for this. The main reason for this is the multi-platform issue that makes it difficult to issue ID's and passwords that are totally transparent to users of Windows 95, 98, ME, 2000 and the Macintosh OS. Our present solution is cumbersome and requires students on PCs to log in with special IDs and passwords.

Summary

Our experience has demonstrated that the end of the traditional lab has not arrived yet—but we are very close. Technology will probably solve the current delays in the delivery of streaming media, and technology will also provide us with a perfect simulation of our audio cassette machine. At that point we can safely move on and keep at least one of our old lab machines in a glass case next to a replica of the Rosetta Stone!

A Student-Centered Multimedia Exploration of Code Choice in Indonesia *

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Abstract

This paper presents a proposal for a multimedia approach to supporting the learning of how social and cultural meanings are conveyed through making appropriate choices in both colloquial varieties of Indonesian and Indonesian regional languages. Segments of Indonesian television programs can be selected as quasi-authentic materials to illustrate regional uses of Indonesian and local languages in a wide range of common situations. The materials would be designed to enable learners to access and interact with the material in a number of ways, ranging from simply viewing them with or without written transcriptions and sociocultural explanations, to such tasks as selecting the appropriate response at pauses in the playing of these video clips. The material would thus lend itself to learner-managed study, while also being substantial enough to provide a regular component of beginning, intermediate and advanced courses in Indonesian.

Introduction

Hey, gang, how ya doin'? Hey, look: I got somethin' to tell ya today. For starters, this ain't the way to start a talk at an international conference, hey.

Part of communicative competence in a language is being able to use registers appropriately, i.e. to choose the right sort of language to suit the situation. We're expected to talk in a relatively formal and academic register at a conference, for example, but if we tried to talk this way to our friends, they'd probably find us distant and boring. To be competent in Japanese one needs to master even more striking differences in speech levels and how they are used, including such intricacies as how taxi drivers and fish mongers tend to be less polite to their customers than bank clerks and car salesmen (Mizutani & Mizutani 1987).

The situation is even more complicated in such multilingual countries as Indonesia, where many varieties of language are used in everyday interaction (see e.g. Kartomihardjo, 1981; Wolff & Poedjosoedarmo, 1982; Anderson, 1983; Zurbachen, 1984; Sneddon, 1990). There is a national language, of course — Bahasa Indonesia, or simply Indonesian — and of course it is widely taught and widely used. However, standard Bahasa Indonesia is not really all one needs to communicate with people in Indonesia. For example, recent research by Goebel (in preparation) has found that Indonesians rarely use standard Indonesian for ordinary social interaction. For some purposes they use non-standard, or colloquial, Indonesian, but to develop close relations with people from a particular area it is also important to try to use the local regional language as far as possible. After showing you an example of how

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this works we'll then go on to suggest how a computerised multimedia program might be developed to help bolster the sociolinguistic competence of Indonesian learners in this area.

Code Choice in Indonesia

Most Indonesians are familiar with how regional languages play a significant role in everyday communication in Indonesia; it's part of their communicative competence. This doesn't necessarily mean they are fluent in many regional languages themselves, but certainly they can appreciate the significance of their use. You can see this by watching Indonesian television programs, for example, since these often involve the use of regional languages along with standard and non-standard Indonesian.

As a specific example, let's consider an episode from the Indonesian television program *None*, roughly 'Missy'. This program is set in Bandung, in West Java, where the regional language is Sundanese. At the beginning of one episode, *Cipoa* or 'Con Artist', a woman seeking a house to lease responds to an advertisement in the paper and arrives at the house in a taxi. When she tries to pay the driver she pretends to have only a very large denomination note, and the taxi driver can't make change for it. Accordingly she goes to the front door of the house, and she has the following exchange with the young woman who answers the door, who she thinks is a maid but who in fact has just inherited the house from her grandmother:

visitor:	Ada orangnya <i>nggak sih</i> di situ? Heh! Is anyone there or not? Heh!	
owner:	Ya. Yeah.	
visitor:	Ada orangnya <i>nggak</i> di situ?	Is anyone there or not?
owner:	Ada. Yes there is.	
visitor:	Panggil, eh. Call [the house owner] eh. Ada uang kecil <i>nggak</i> ?	Have you got any change?
owner:	Ha? Ada kamar kecil? Ada <i>tu</i> di dalam, masuk <i>aja</i> .	What? Is there a bathroom? Yeah there is one inside, come inside.

This exchange is entirely in Indonesian, although not entirely in standard Indonesian: the words in italics are non-standard or colloquial expressions. This is an appropriate choice of language considering that these two women have just met. After the visitor has gone inside, however, the owner notices the taxi driver and realises that he is an old friend of the family, and he also recognises her. They call out to each other, and with great excitement they have an exchange that includes quite a lot of Sundanese, as shown in bold face below:

driver:	Neng Dewi?	Miss Dewi?
owner:	Mang? Heh! Mang?	Uncle? Huh! Uncle?
driver:	Neng Dewi. Neng!	Miss Dewi. Miss!
owner:	Mang? Mang! Mang...	Uncle? Uncle! Uncle...
driver:	Ini teh Neng Dewi téa ?	You're Miss Dewi aren't you?
owner:	Ya Mang .	Yes Uncle.
driver:	Euluh euluh euluh mani sudah besar begini ah; masih ingat ka Mang coba, he.	Gee gee gee wow you're already grown up; do [you] still remember Uncle, try [and remember].

owner:	Ya masih atuh ini teh Mang Mang kéheula kéheula kéheula kéheula, Mang,... Mang Ucup	Yeah of course you [are] Uncle, Uncle, hang on, hang on, hang on, hang on, Uncle,... Uncle Ucup.
driver:	Wah ketut damang Neng?	Yeah how are you Miss?
owner:	Saé Mang.	Very well, Uncle.

Notice the way Sundanese is being used here: aside from the address forms *neng* and *mang*, translated as ‘Miss’ and ‘Uncle’ respectively, there are some interjections — the ‘gee gee gee wow’ part and *kéheula* ‘hang on’ — and an ordinary greeting. It doesn’t really matter if the television audience fully understands the Sundanese — and indeed, the dialogue shifts back into Indonesian, with only the occasional Sundanese expression, as they need to understand it. What is important here is that the audience can appreciate how this shift into the local language signals familiarity. This is also obvious from the action in this scene, with the owner of the house running down the steps almost as if to embrace the taxi driver (she doesn’t, of course), but it would be incongruous for them to be using standard Indonesian as she did this. It would be like effusively greeting a long lost friend with something as stuffy as, ‘How very pleasant to renew our acquaintance!’

A Multimedia Approach to Code Choice

As important as sensitivity to code choice is to Indonesian learners, there are currently few resources for teaching it. For this purpose audio-visual materials are especially valuable, since neither print nor the individual teacher can hope to provide adequate examples of the range of interactions learners might be exposed to. Even so, few of the audio-visual materials available for Indonesian provide a good idea of how Indonesian is actually spoken in conjunction with regional languages; see Goebel and Black (in preparation) for a survey.

As you saw earlier, however, Indonesian television is a ready source of examples of such interactions, and in fact, Goebel (1996) has already drawn on such television programs for the teaching of Indonesian sociolinguistics. Of course, Indonesian soap operas and situational comedies may not be fully authentic representations of how Indonesians interact: they are acted out especially for the benefit of Indonesian speakers in the television audience. Even so they go some ways towards approximating authentic texts that

...require participants to respond with behaviors that are socially appropriate to the setting, the status of the interlocutors, the purpose, key, genre, and instrumentalities of the exchange, and the norms of interaction agreed upon by native speakers. (Kramsch, 1993, p. 178)

At the same time they are, of course, authentic representations of what Indonesians see on television; they are thus authentic materials in the sense of discourse “created to fulfil some social purpose in the language community in which it was produced” (Little & Singleton, 1988, p. 21) or in the sense of “any material which has not been specifically produced for the purposes of language teaching” (Nunan, 1989, p. 54). Furthermore, the fact that they are meant to be intelligible to Indonesian speakers certainly makes them more accessible to Indonesian learners than if they depended more heavily on a knowledge of regional languages.

Such television programs could be put to use in various ways; for example, they could be shown and discussed in a classroom, or they could be kept in a video library for self study. However, their value can be greatly enhanced by using information technology to allow them to be accessed and manipulated in a variety of ways. This freedom in how the materials can be accessed is especially important if we agree with Lian and Lian (1997) that it’s really up to learners to make sense of the materials, and thus control must be in their hands. We thus envisage creating a multimedia database that follows principles explicated by Hoven (1997, section 1.3.1):

...the learner using the package is allocated the major share of control, with the software package taking on more of the role of resource provider. In this context, the software provides the frame-

work for this allocation of control by structuring and presenting the available language learning resources in a manner that is easy for the learner to navigate, while at the same time providing the information necessary for the learner to make informed decisions about her or his learning path.

An example of commercial software that tends to embody these principles, if with only limited multimedia capabilities, is *LanguageNow!*, which includes a database engine that can be used to access language lesson material in a variety of languages as well as in a variety of ways (see Black, 2000, sect. 2). In addition to many choices provided by the menus and buttons — perhaps too many choices to be easy to navigate at first — it also provides extensive guidance screens that learners can call up if they want advice on different ways to approach the materials. For practical reasons such extensive guidance screens are probably best in the learner's first language. To promote language learning, however, we would want menu choices to be in Indonesian, with an option that holding the cursor over the text for a couple of seconds would produce the English translation.

As another matter of principle, it would of course be desirable for our database to include the whole of each television program, so that learners would have the option of viewing them as wholes as well as of accessing particular scenes within them; see Oller (1983) for how a good story line can enhance language learning. However, to expose learners to a variety of situational contexts, we would want to draw examples from a wide range of programs, and currently it may not be feasible for the database to include many hours of complete programs. In any case, simply to watch an entire program through in its normal sequence, at least, would not require the flexibility in access that a computerised database could provide.

As a final principle, we would want the material to be easily accessible to the largest audience possible, and thus we would want to rely on formats commonly used on the World Wide Web, which are accessible from most computer platforms. For convenience, of course, the materials could be made available on CD-ROM and/or DVD, whether or not through computer networks as well.

Program Design

We are thus thinking in terms of a database of video clips selected from Indonesian television programs to illustrate how Indonesian is used with regional languages in a variety of common situations. The opening menus could first allow the video clips to be accessed by speech function, type of social relationship, region within Indonesia, and/or level of difficulty. For example, the menu for speech functions could allow users such options as the following, where the optional, pop-up English translation is shown in parentheses:

- Menyampaikan permintaan (Asking favours)
- Menyampaikan permintaan maaf (Apologizing)
- Menyampaikan terima kasih (Expressing gratitude)
- Menyampaikan pujian (Flattering)
- Menyampaikan perasaan (Showing feelings)
- Penyapaan (Greeting)
- Penyelesaian percakapan (Ending a conversation)

Upon selecting a particular video clip the learner could be given such choices as the following (here we've suppressed the Indonesian in favour of the English):

1. View the video clip with or without written transcription
2. View the written transcription with or without English translation

3. Read an explanation in Indonesian or in English
4. Interact with the video clip
5. View a related video clip differing in (a) type of relationship, (b) region, or (c) level of difficulty.

The first three provide various ways for the learners to familiarise themselves with the video clip: they could start by viewing it, and if they should need help they can call up a transcription, translation, and/or an explanation of the social factors behind the choices of language in the clip. As for option 5, it enables learners compare one clip with others that differ in terms of the parameters indicated.

Option 4 can provide various ways of interacting with the videos. In order to cater for relative beginners these could include such basic options as having the video clip pause to allow learners to identify what they have just heard, e.g. by selecting the correct transcription, or perhaps by unscrambling a transcription that gives the correct forms in the wrong order. Such tasks help promote language acquisition because they call attention to details of language form (see e.g. Long, 1991).

Such tasks as the above don't focus explicitly on questions of code choice, although by helping students master the language involved they should also help promote familiarity with the way language is being used. However, other tasks could be devised to bring out aspects of code choice more explicitly. In particular, the video could be paused while the learner is given a choice of what the next speaker is most likely to say. For example, to draw again on the first exchange we presented from the Indonesian program *None*, the video might pause after the visitor says *Ada orangnya nggak sih di situ? Heh!* (i.e. Is anyone there or not? Heh!). The learner can then be asked which of the following the other woman is likely to use in reply:

1. Enya.
2. Ya.
3. Sumuhun.
4. Inggih.

Perhaps even before making a choice the learner could also request an explanation of how the responses differ; in the above case all the forms mean 'yes', but (a) is in low or familiar Sundanese, (b) is in Indonesian, (c) is in polite, respectful Sundanese, and (d) is in polite, respectful Javanese. The fourth choice is obviously wrong in the Sundanese context, but should the woman reply in Indonesian or Sundanese, and if the latter, at what level of politeness?

Although this task is presented in written form above, it could also be presented through a set of buttons that would play oral versions of the alternative responses. These would be spoken by a voice different from that actually used in the video clip — it wouldn't be feasible to seek out the original actors — but that has the advantage of exposing learners to alternative pronunciations of the same expressions. To ask learners to select among spoken alternatives not only reinforces their oral language listening abilities, but in addition it allows occasional alternatives that differ only in prosody, such as intonation contour and stress, which would not be obvious from written forms of the languages involved.

Conclusion

In conclusion, we hope we have convinced you of the importance of helping language learners become familiar with code choice, whether simply what register to use in what situation, as is typically sufficient for English, or even the significance of choosing among different languages, as is important in Indonesia. As for how to familiarise learners with such things, we advocate putting them in control of a multimedia database that can be

accessed and used in a variety of ways, according to their needs. The use of such materials should help them become more independent learners as well as help them become more aware of appropriate ways to react to language use in a broad range of interactional contexts.

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Student-Constructed Web Resources for Intercultural Understanding

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Introduction

Students in countries where English is a foreign language often do not have opportunities to use English for communication. The Internet is one resource that can allow students to communicate meaningfully in English. With greater access to computers both at school and at home, this teaching tool has become more widely available in recent years.

One way to combine the Internet with teaching English is to give students a group or individual assignment to make their own web pages. Students can make pages about a subject that they are interested in, a subject related to their major, hobby, or something they would like to learn about.

As students carry out these assignments, among the skills they can develop are searching resources on the Internet, gathering information, reading English, selecting information and classifying it, writing in English, organizing information, describing or explaining resources, presenting information in the way that readers can understand easily, audience analysis, communicating with other group members or readers using e-mail, and writing HTML. It is possible to include many different kinds of communication in English, so a web page project can generate a great many language activities in English, and students will both use and be exposed to English in the context of working on a task of interest to them.

We have organized cultural web page making projects for English language students, and they have enjoyed them as well as studying English by making web projects. In this paper, we will explain the advantages and disadvantages of such assignments. We will review some web projects that are already on the web and explain how this assignment can be done.

Advantages and Disadvantages of Web Projects

Depending on the exact conditions of the assignment, web projects can have a variety of advantages and disadvantages.

Advantages

Possibly the most important advantage of student-made web pages is that they make it possible for students to use English as a form of communication. In EFL settings, students mainly use English in class for the teacher to evaluate. They generally do not read in English beyond what they are assigned to read for a course. They do not often have an opportunity to read about subjects of their own choice or to use English as a form of communication. A web page assignment can involve doing research both on and off the Internet, writing material for the web pages, reading and answering responses to the web pages sent in by readers. These involve communicating in English in meaningful ways.

When making web pages that might be read by anyone, students need to be aware of their audience. They need to analyze what their audience may or may not know about the subject. For example, in making a web page explaining Japanese culture to non-Japanese, writers need to consider how to explain aspects of Japanese culture in English to a general reader who may have little or no knowledge of Japanese culture in a way that is understandable.

If it involves research, a web page assignment exposes students to available resources on the Internet, giving them an idea of what sorts of resources are available, and helps students learn how to use search engines and links pages effectively. Students need to gather resources, read them, and select and organize information, all in English.

Student-made web pages can be done on a wide variety of subjects, depending on the interests of the students and their level of proficiency. For English language students, subjects related to cultures of various countries and to enhancing international understanding are particularly appropriate. Students can do web pages with information about English-speaking countries, which will also help them learn about the cultures of English-speaking countries. They can also do web pages about Japan, in order to learn to explain Japanese culture to English speakers.

Through this project, students can experience communication in English, and they can learn how to present and organize information effectively. In the case of group projects, students can learn through the comments their peers make and cooperation with them.

Disadvantages

Students may vary in the amount of experience they have in the use of computers, e-mail, browsers, etc. Some students will have had little experience and will need a great deal of help. In addition, most students will not have had experience making HTML files. For some students, lack of these computer skills will make this project difficult. In addition to giving students help with computer skills, one possible solution is to form project groups with students who have both high and low computer skills.

Using search engines effectively is not easy, and students are likely to have difficulty finding useful web resources. They may need guidance from the teacher on using search engines and finding useful links pages or other web resources, if these are necessary for the assignment.

Writing descriptions or explanations for links or essays for their web pages in English may also be difficult for students. While it is probably not necessary for teachers to completely correct their students' English, teachers should try to choose topics that are within their students' ability to express themselves.

Students may not have had the experience of working on a project in which they choose a topic; gather resources; read about the topic; select, organize, and synthesize useful information; and present the final product effectively. The process may be difficult for students, and they may need help from the teacher at various stages.

Since this project involves extensive use of English and a variety of types of tasks, it is not an easy assignment. However, all aspects of the project except making HTML files helps develop skills that are necessary for university students. Making HTML files is useful for study and work, and making simple ones is not difficult if proper instruction and good examples are given.

Review of Similar Projects

A number of teachers throughout the world have made use of web pages to display their students' projects. In this section, we will briefly discuss just a few of these. There are a variety of ways to evaluate such projects, but here we have commented on such aspects as the usefulness of the project as a resource, its organization, and interest for students doing the project and potential readers.

Tom Robb's student projects. Tom Robb of Kyoto Sangyo University has had his students do a number of web projects based on explaining Japanese culture (<http://www.kyoto-su.ac.jp/~trobb/index.html>). These are Famous Japanese Personages Project, Kyoto Restaurant Project, Japanese Recipes Project (in English and Japanese), Kyoto Liquor Story (in English and Japanese), Tips for Using Nisuswriter (Project), and The Sounds of Japan. Each of these have explanations of some aspect of Japan or Japanese culture, except for Tips for Using Nisuswriter (Project), which is related to a computer program. The Personages Project, the first and most extensive of the projects, has brief biographies of famous modern Japanese people, divided into categories according to their field. The Kyoto Restaurant Project has information about restaurants in Kyoto, with maps and illustrations. Each of the projects is well organized and provides a useful resource to readers outside the course. Students' e-mail addresses posted on many of the pages allow readers to respond.

Dave Sperling's student project. Dave Sperling of California State University of Northridge had students interview each other and write brief biographies for a composition course (<http://www.csun.edu/~hcesl004/CSUN.html>). While this allows students to see their work on the Internet, it is not a useful resource for other readers.

Seiko Oguri's student projects. Seiko Oguri of Chubu University has a student project called "Writing about Japan", where students write about different aspects of Japanese culture in the categories of "School," "Home," "Society," "Traditions," "Food," and "Seasons" (http://www-clc.hyper.chubu.ac.jp/oguri/japan/write_jpn.html). In addition, Prof. Oguri has another project where students write about their intercultural experiences (<http://langue.hyper.chubu.ac.jp/seiko/xculture94.html>) in both English-speaking and Asian countries. Some of the essays are general, and some deal with specific issues such as inconveniences or surprises. The former is a potential resource for foreigners wishing to learn about Japan or Japanese interested in how Japanese culture can be described in English; the latter is useful for its descriptions of cultural differences from the viewpoint of Japanese students.

Kazunori Nozawa's student projects. Kazunori Nozawa of Ritsumeikan University in Kyoto has had students do web pages on the city of Toyohashi (while teaching at Toyohashi University of Technology) and "Famous Japanese Scientists and Engineers" and "Introduction to CALL" (<http://www.ritsumei.ac.jp/ec/~nozawa/CALLclass-e.html>). These allowed students to work on subjects close to their interests while providing good resources.

Ruth Vilmi's student projects. Ruth Vilmi of Helsinki University of Technology has a web page with students' essays about a variety of aspects of Finnish culture (<http://www.ruthvilmi.net/hut/Project/Culture/>). There are also a few student web presentations which involved doing surveys of other classes. These are an interesting resource for any readers interested in Finnish culture, but it might be more useful if the topics were categorized.

K. Harumi's student projects. In terms of topic, the student web pages of K. Harumi of Nanzan University in Nagoya are the most challenging (<http://www.ic.nanzan-u.ac.jp/~kharumi/fl/classidx.htm>). They deal with such complex issues as abortion, nuclear testing, the rising sea level, and earthquakes. However, unfortunately, the essays are disorganized and difficult to follow, and the format is unclear.

Kazue Tanaka's student projects. Students of Kazue Tanaka of Tokuyama Women's College did a very interesting project on cross-cultural topics (<http://www.tokujo.ac.jp/Tanaka/Kazue/kazue.html>) by interviewing people in different cultures by e-mail and looking for Internet resources. While this project makes good use of the Internet and allows students to communicate with people of different cultures, unfortunately, the results, described on students' web pages, are only in Japanese. Having the students write in English would seem to be a better conclusion for the project, both making students' findings available to a wider audience and requiring the students to use more English.

Lilliam Hurst's student projects. One of the more unusual projects is by students of Lilliam Hurst of Collège Claparède in Geneva (<http://deil.lang.uiuc.edu/exchange/projects/geneva1.html>). This project, for a literature course, involved reading the play *A Streetcar named Desire* and writing letters. Students either wrote letters to the charac-

ters in the play, offering sympathy for their situations, giving advice, etc., or wrote letters that the characters themselves might have written. As a project for a literature course, this seems to be a useful way to help students understand the characters in a literary work. It is interesting to readers interested in that literary work to see the students' points of view.

Procedures for the Project

In this section, we will discuss the specific assignment that one of us has used, with some suggestions for adaptations and for carrying out the assignment. This assignment may be adapted, depending on the level and interests of the students and the purpose of the course.

Since this course was for students interested in going abroad for study, the topic of the assignment was study abroad. Students chose a university and made a web page with at least 50 links (with descriptions, classified in categories) to web pages that would be useful to a student at that university, including web pages related to the university, accommodations, the city, the country, etc. This topic is appropriate for students who may work or study abroad, or who are currently working or studying abroad. Students can also make web pages with information related to their own university for foreign students studying there. Another possibility is for students can also make web pages related to a particular country that they are interested in, with information about customs of that country, the history, the cities, etc. The content areas that students choose to work on depend on the students' interests and the topic of the course.

Since it is not easy to make HTML files, students are provided with a web page for instruction and samples. After students study how to make a web page, they can use a sample to start making their project web page. (Helpful URLs can be found in the section of this paper on web resources.) Students who wish to use advanced techniques to make web pages may do so, but this should not be part of the evaluation if this is a project for an English language class rather than a computer class.

While working on the project, students had to make progress each week, and some pages were reviewed in each class. Students were assigned to give comments on other students' web pages using e-mail in between classes, and these comments could be used to improve the web pages. By the end of the project every student had reviewed all other students' web pages at some stage and had given comments.

In the final class, presentations were made of all web pages. Advanced students made presentations in English, based on instructions students were given for oral presentation lessons. All student projects are kept on line permanently, and students are satisfied to show their product world wide.

Useful Web Pages

For teachers interested in having students do such an assignment, there are a variety of web pages that are helpful. These can be divided into three categories: help in writing web pages, search engines and search advice, and sites related to cultures. (Some pages fall into more than one category.) In addition, examples of pages made by students can be seen on the Internet. In this section we will discuss a few web sites in each category.

Help with Writing Web Pages

There are a large number of web pages for those interested in learning how to write web pages. Although there are programs with which one can write web pages without knowing how to write the source code of web pages, it is often useful to know the basics. The following are links pages for pages on writing web pages or pages themselves, with comments.

1. Using the Internet – Writing Web Pages

<http://ilc2.doshisha.ac.jp/users/kkitao/online/www/internet.htm#write>

This page has links to a variety of helpful sites that are useful in writing web pages.

2. Making Simple HTM Files

<http://ilc2.doshisha.ac.jp/users/kkitao/online/www/kitao/int-www.htm#adv>

This page has explanations of how to write web pages and examples of features that you can use.

3. A Beginners Guide to HTML

<http://www.ncsa.uiuc.edu/General/Internet/WWW/HTMLPrimer.html>

This is an excellent, clear explanation of HTML. It includes a general introduction of what HTML is, what tags are, and how to use tags. It also has links to other useful sites.

4. Learning English on the Net (LEON)

<http://home.att.ne.jp/gold/db/leon.html>

This page has links to information about the Web especially for English language students.

5. How to Make a Successful ESL/EFL Teacher's Web Page

<http://www.aitech.ac.jp/~iteslj/Articles/Kelly-MakePage/>

This page includes good advice about making web pages. Among its useful features are “templates” (samples of basic web pages that can be adapted), advice on good web page “style,” and advice about what not to do.

6. Webcom HTML Guide

<http://www.webcom.com/~webcom/html/tutor/>

This is a page with information about writing web pages, templates, etc.

7. Yahoo! Geocities

<http://geocities.yahoo.com/home/>

This is a page with help building a web page, where you can post your own page.

8. Cut and Paste JavaScript

<http://www.infohiway.com/javascript/toc/>

For those interested in adding more sophisticated features to their web page, this page has examples of code for javascript. It allows students to add such features as guestbooks in which they can get feedback on their pages, games, frames, and clocks.

Search Engines and Advice for Searching

Searching is a vital skill for users of the Internet—it is almost impossible to use the Internet without being able to search, and effective searching skills can save users hours. The following are links to search engine links pages and to advice about searching effectively.

1. Reference Materials for Students and Researchers – Search Engines

<http://ilc2.doshisha.ac.jp/users/kkitao/online/www/referenc.htm#search>

This page has links to search engines and to advice about searching.

2. Net Search Pages

<http://home.netscape.com/escapes/search/ntsrchrnd-1.html>

This page has links to search engines, divided into categories according to type and purpose.

3. Search Engine Watch

<http://searchenginewatch.com/>

This page has links to search engines, reviews of search engines, etc. It is useful for learning about different types of search engines, how they are different from one another, and so on.

4. Search Techniques Seminar

<http://kevinryan.com/student/search/>

This page is based on a seminar on searching the Internet, and has information about basic and advanced search techniques and links to resources.

5. Backflip

<http://www.backflip.com/login.ihtml>

This is a search engine that can be personalized and which includes “web tours” on different subjects.

Lists of Links to Sites Related to Cultures

As mentioned above, an appropriate topic for English students is culture and intercultural understanding. There are many web sites where students can learn about other cultures or their own.

1. Information on the US

<http://ilc2.doshisha.ac.jp/users/kkitao/online/www/us-info.htm>

This page has links to a great many sites related to the US.

2. Useful Resources, Lesson Plans, and Teaching Materials for Teachers – Cultures

<http://ilc2.doshisha.ac.jp/users/kkitao/online/www/teacher.htm#culture>

This page has links to resources related to a variety of cultures.

3. American Studies Web

<http://www.georgetown.edu/crossroads/asw/>

The page has extensive links to information on the United States.

4. Culture Pages in English

<http://www.geocities.com/Athens/Forum/8383/>

This page is a class project with information related to a variety of cultures.

Examples of Student-Made Web Pages

The following are examples of web pages made by Kenji Kitao's students

1. Kyoto: Ancient Capital of Japan

<http://ilc2.doshisha.ac.jp/users/kkitao/class/kyoto/>

(Other student projects can be found at: <http://ilc2.doshisha.ac.jp/users/kkitao/class/material/project/> and <http://ilc2.doshisha.ac.jp/users/kkitao/class/>.)

2. To Study at SOAS

<http://ilc2.doshisha.ac.jp/users/kkitao/class/practicum/nishizawa.htm>

3. Welcome to San Diego!!!

<http://ilc2.doshisha.ac.jp/users/kkitao/class/meta/f/erika/>

4. Amherst College

<http://ilc2.doshisha.ac.jp/users/kkitao/class/practicum/kato.htm>

5. Travel Cheap in Japan -Transportation and Lodging - (Student Project)

<http://ilc2.doshisha.ac.jp/users/kkitao/class/meta00/odani.htm>

The following are some other student web projects:

6. Tom Robb's student projects (Kyoto Sangyo University)

<http://www.kyoto-su.ac.jp/~trobb/index.html>

7. Dave Sperling's student project (California State University of Northridge)

<http://www.csun.edu/~hcesl004/CSUN.html>

8. Seiko Oguri's student projects (Chubu University)

http://www-clc.hyper.chubu.ac.jp/oguri/japan/write_jpn.html

<http://langue.hyper.chubu.ac.jp/seiko/xculture94.html>

9. Kazunori Nozawa's student projects (Ritsumeikan University in Kyoto)

<http://www.ritsumei.ac.jp/ec/~nozawa/CALLclass-e.html>

10. Ruth Vilmi's student projects (Helsinki University of Technology)

<http://www.ruthvilmi.net/hut/Project/Culture/>

11. K. Harumi's student projects (Nanzan University in Nagoya)

<http://www.ic.nanzan-u.ac.jp/~kharumi/fl/classidx.htm>

12. Kazue Tanaka's student projects (Tokuyama Women's College)

<http://www.tokujo.ac.jp/Tanaka/Kazue/kazue.html>

13. Lilliam Hurst's student projects (Collège Claparède in Geneva)

<http://deil.lang.uiuc.edu/exchange/projects/geneva1.html>

(The handout for the original poster session, with most of the above links, can be found at <http://ilc2.doshisha.ac.up/users/kkitao/library/handout/FLEATIV.htm>.)

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Students' Feelings About a Writing Class in a Junior High School Computer Room

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Abstract

The attitude toward a writing class using a computer was very positive among my students who had taken my class for two years. They thought the class fun or interesting. They also liked using some functions of Microsoft Word, such as spelling check, grammar check to improve their writings. Reading and answering their friends' writing also motivated them, too.

Introduction

What do students think about computer-mediated class? Do they like it or not? Those are the objectives of this article.

In this article I'll write about my own classes using a computer in junior high school. First I'll explain the procedure of my own classes using a computer, then I'll introduce my students' opinions and comments.

The Procedure for My Computer-Mediated Class

The whole unit consists of two classes, and in the 1st class the students write about their favorite topic on a computer. The following is the procedure of the 2nd class.

The teaching procedure

1. Greetings (1 min.)
2. Review (4 min.)
 - a. Talk about what they wrote.
The students read what they wrote in the previous period and then talk about it with their friends.
 - b. Useful expressions
The students listen to teacher's explanation and repeat the sentences on the worksheet.
3. Rewrite (20 min.)
The students read what they wrote and rewrite.
4. Peer check (10 min.)
 - a. The students read what their partner wrote and give some advice.
 - b. The students answer what their partner wrote.

5. Consolidation (5 min.)
 - a. The students print out what they wrote.
 - b. The students read what other friends wrote.

Students' feelings

Last July I asked the students to answer the following three [sic.] questions.

Question 1. What do you think of a writing class using a computer?

Question 2. Do you have any advice or suggestions to improve this class?

I will summarize my students' comments on each question.

The Students' Comments to Question 1

1. Fun/interesting

Most of the students responded that the class was fun or interesting. They like this class very much. At that time, half of my students didn't have enough chances to use a computer at home, so I guess using a computer itself motivated them.

2. Useful functions of the computer software

Microsoft Word is installed on their computers, so they used some functions, such as spelling checkers, grammar checkers, and word count. Some students commented that these functions were useful.

3. Peer correction

4. Reading and answering friends' writing

5. Learning a lot from friends' writing

In class the students had some chances to work with their friends, and they worked very hard with their friends. Some students stated that peer correction was helpful.

One student wrote, "My friend tells me some mistakes I didn't notice."

Each of the classroom computers can send and receive information to others on the network, so the students can read and answer their friends' writings on their own computer easily.

About 15 % students like this activity. One girl read her favorite boys' writing on her computer and she looked very happy.

They also learned a lot from their friends' writing. Some students said they learned some new expressions from their friends.

6. Easiness of editing / rewriting

A computer has considerable advantages over a pencil and paper. For example, letters and words can be entered, changed or deleted very easily. One girl I have already mentioned read her draft again and again during the 2nd period and this process encouraged her to write more accurately. One student wrote, "I wouldn't have corrected or revised if I had written this in my notebook."

The Students' Comments to Question 2

- 1, More time to read and answer friends' writing

In class the students spent a lot of time writing or revising their own writing, so they didn't have enough time to read and answer friends' writings. Reading and answering their friends' writings on their own computer is one of the advantages of this class, so I should have allocated more time to do for these activities.

2. More typing practice

About half of the students didn't have a computer at home at that time, so they didn't have any chances to practice typing at home. In my class a few hours were allocated to typing practice, but I'm afraid it wasn't enough time for the students who weren't used to typing.

Summary

Computer-mediated language instruction is only one part of my whole class. Integrating face-to-face instruction and computer-mediated classes must complement each other.

From my computer-mediated class, I can say the following things.

1. From the students' point of view, computer use in the classroom was highly motivating.
2. The students' attitude toward computer-mediated instruction was very positive.

I must mention one more thing. Now computer use in the classroom is becoming more common, so just using word processor software won't be interesting for students. My goal is to improve classroom activities using a computer.

Students' Opinions of FL Teachers Across Cultures

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Abstract

Learner-centred methodologies have increased the need for language teachers to see the classroom from their students' point of view. Teachers, however, are often unaware of the expectations that their students have of them. It has been reported that the situation can become particularly harmful when the teacher and the students come from different cultures. Research into students' demands of their teachers and their qualities is a helpful tool to establish a closer link between the teacher and the student. We therefore believe that knowledge of students' expectations should be a part of teachers' education. The paper reports the results of a cross-cultural study of university students' expectations of their foreign language teachers. Both culture-specific factors and factors which transcend culture are investigated. Although quite a few studies have been devoted to the students' expectations of their language teachers, the novelty of our study is in performing it across three countries, the cultures and education systems of which are known to be radically different: Scotland, Japan and Russia. The study is conducted on the basis of two successive original questionnaires, which are subjected to content analysis revealing similarities and differences of students' opinions across cultures.

Introduction

Recent trends in language teaching methods devote much more attention to the figure of the student than in traditional teacher-centred practices (Nunan, 1988; Richardson, 1992; Dam, 1995). The teacher's role is seen as that of a facilitator of learning, who should be attentive to students' demands and needs, and should try to meet them (Harmer, 1995). A part of students' demands is focussed on the teacher.

Students have an ideal of a language teacher, and they compare the performance of a real teacher against this ideal (Ryan, 1998). It has been shown that students' expectations of their teachers are in part culturally-determined, and that lack of awareness of students' different cultural background can lead to "culture bumps": misunderstandings and conflicts (Andersen, 1985; Archer, 1986).

There are a few available cross-cultural studies of students' expectations of their teachers (Mar, 1980; Quereshi, 1980; Radford, 1980; Durham and Ryan, 1993; Makarova and Ryan, 1997). Although these studies revealed some important differences in students' perception of their teachers across cultures, the problem is that a comparison of two cultures does not allow us to draw conclusions about features recurrent across cultures versus features which are culture-specific. Furthermore, results obtained in different research projects cannot be compared, as they were obtained with different research designs. The challenge of our study was to get comparable results from three different countries: Britain, Japan and Russia.

Cross-cultural comparisons require a clear understanding of the notion of culture the researcher operates with. "Culture" is a complicated anthropological and sociological concept which can be seen from a cultural-anthropological, interactional-sociolinguistic, pragmatic and many other perspectives (Sarangi, 1994). There is very little agreement between various disciplines which study culture with regard to its exact nature and definition

(Sarangi, 1995). We define culture in the context of language learning as “student culture” - common practises, expectations, behaviour, way of thinking peculiar to students in a given academic environment in a certain country.

Materials and Methods

The Questionnaire

The study is conducted in two stages by means of two successive questionnaires. This paper gives preliminary results obtained at the first stage after analysing responses to the first-round questionnaire. The aim of the first questionnaire was to collect a pool of items relevant for students in different cultures.

To ensure comparability of data the questionnaire was compiled in English and then translated into Japanese and Russian using the Werner/Campbell back translation method (Werner & Campbell, 1970). The questionnaire consisted of demographic questions as well as four research questions:

1. What in your opinion makes a good teacher of a foreign language in a university?
2. What, do you think, a foreign language teacher at a university ought to do in class?
3. What, do you think, a foreign language teacher at a university should not do in class?
4. What kind of attitude of a teacher to students do you prefer?

The questionnaire in students' native language was distributed during university classes in each of the three countries. Students had about 10-15 minutes to respond to the questions freely, in writing, in their native language.

The Analysis

All the responses were analysed by noting keywords from each response to each question, and then calculating the frequencies of key-words. Frequency scores for near-synonyms were combined.

The Sample

The sample was taken from language major students in one medium-to-high-ranking university in each country. Please, refer to Table 1 for sample size and distribution by age and gender.

Results

While filling in the questionnaire, students did not always separate their characteristics of the language teacher in full accordance with the questions of the questionnaire. To organise characteristics of the language teacher we therefore divided all the recorded entries into the following semantic groups: teachers attitudes, teacher's personality, teacher's skills, teacher's knowledge, what the teacher should teach, teacher's actions in class, and teacher's experience.

We report below characteristics which were recurrently found in all the three cultures, and can therefore be considered to be possible teaching universals along with features which were found only in one culture, and can therefore be considered culture-specific.

Table 1. Sample Characteristics

Total number	Nationality of students		
	British	Japanese	Russian
	131	85	82
Female (frequency, %)	99 (75.5)	36 (42.4)	65 (79.3)
Male (frequency, %)	32 (24.5)	49 (57.6)	17 (20.7)
Year at the university	number of students (%)		
1	18 (13.7)	0	0
2	68 (51.9)	85 (100)	43 (52.4)
3	1 (1)	0	20 (24.3)
4	12 (9)	0	19 (19)
Mean age of students	20.3	19.8	18.5
Standard deviation by age	0.13	1.25	1.06

Teacher's Attitudes

Characteristics found across the three cultures. Be friendly.

Culture-specific characteristics.

British subjects: be encouraging, enthusiastic, helpful, sympathetic, positive, open, committed to class, optimistic, close to students, listen to students opinions, not patronising, not critical, not embarrass students, not look/get bored. not discourage students, not ridicule, not laugh at students' mistakes.

Japanese subjects: create a stress-free environment, not teach without thinking of students.

Russian subjects: be respectful, be strict, be tactful, be good-willing/kindly, free/casual attitude, treat students as colleagues, not be too familiar, not scold.

Teacher's Personality

Characteristics found across the three cultures. Be fun, be kind.

Culture-specific characteristics.

British subjects: open-minded, happy.

Japanese subjects: be gentle, not get angry easily.

Russian subjects: be calm, gain authority among students.

Teacher's Skills

Characteristics found across the three cultures. Be good at explaining things, have good pronunciation in the foreign language, be a good communicator.

Culture-specific characteristics.

British subjects: be knowledgeable, clarity, be able to explain and teach grammar well, be inspiring, be able to make people relaxed while expressing their opinions, be completely fluent in both languages, give dynamic lessons, make the class fun.

Japanese subjects: be easy to understand, give enjoyable lessons, not be difficult to understand.

Russian subjects: be good at interesting students in the subject, make the lessons interesting, high professionalism, competent, not bore students.

Teacher's Knowledge

Characteristics found across the three cultures. None.

Culture-specific characteristics.

British subjects: know foreign language grammar, be fluent in the students' native language, be knowledgeable, understanding of the difficulties involved in foreign language learning.

Japanese subjects: none.

Russian subjects: erudite knowledge, knowledge of teaching methods, knowledge of psychology

What the Teacher Should Teach

Characteristics found across the three cultures. Foreign culture/about foreign countries, daily conversation.

Culture-specific characteristics.

British subjects: grammar, translation, not teach too much grammar.

Japanese subjects: real/living foreign language

Russian subjects: none.

Teacher's Actions in Class

Characteristics found across the three cultures. Use only the foreign language, use the foreign language as much as possible, communicate with students.

Culture-specific characteristics.

British subjects: make sure everyone participates, encourage students, stimulate discussions of different topics in the foreign language, give interesting assignments, structure classes well, have lots of questions/answers, inspire, have group work, not lecture impersonally, refuse to speak students' native language, not speak quickly, not correct every little mistake, not speak too much him/herself, not confuse students.

Japanese subjects: use students' native language if necessary, teach at an appropriate level, not teach pointless lessons.

Russian subjects: novelty, check students' progress, do many exercises, teach, transmit knowledge, use records/tapes, use videos, explain with examples, come to class, not get distracted by personal matters, not get side-tracked, not talk about personal life.

Teacher's Experience

Characteristics found across cultures. None.

Culture-specific.

British subjects: both native and non-native teachers should teach, interest/understanding of foreign culture.

Japanese subjects: have experience living in the foreign language country.

Russian subjects: be interested in the subject, love the job.

Discussion

Our study is consonant with the idea suggested by Oxford and Anderson (1995) of the existence of learning universals along with culture-specific features.

The aspects of a foreign language teacher characteristics which attract most attention in each culture can be outlined as follows. British students concentrate on the exact activities the teacher should perform in class, which may reflect better awareness of teaching methods by British students. They also are strongly concerned for getting equal opportunities to participate in class activities. Specific requirements of Japanese students reflect the academic situation (large classes, many foreign teachers who are hard for students to understand). Russian students' responses claim technical means of education that students are missing (use records, tapes), their learning needs (check, repeat), striving for entertainment (novelty, not bore students), and a wish for better discipline on behalf of the teachers (come to class).

The results of our research are preliminary, and should be treated with caution. A clearer picture of the cross-cultural differences in students' expectations of their teachers should emerge upon the completion of the second round questionnaire.

Earlier studies of Japanese students' expectations of their language teachers revealed that Japanese students may employ different scales to evaluate native and non-native teachers (Shimizu 1995; Hadley & Yoshioka Hadley, 1996). The subject of different qualities or scales for foreign and native teacher did not arise in the entries of our questionnaire, whereas the question of native/non-native teacher and the degree of knowledge of both the studied language and the native language of the students was raised by the subjects. Although our present research did not pursue such a goal, it is important to check if the same scale, or different scales are applied to native and non-native teachers of foreign languages in countries other than Japan.

Conclusion

Our research indicates that some characteristics of a language teacher are found recurrently across different cultures and may be considered "learning universals," whereas some other characteristics are culture-specific. Cultural differences after they are revealed pose a question "what we do with culture" formulated in another context by Sarangi (1995, p. 445). Culture is not only a map (a description) OF behaviour; it is nowadays beginning to be seen as a map (a guideline) FOR behaviour (Peterson, 1979). In this sense studies of language class cultures can become an implicit suggestion for a change to bridge the gap. What kind of change should it be? Should the teacher adapt his/her behaviour to match the needs of the students? Should he/she try to teach the students the ways of his/her different culture, the culture of the country where the language is spoken? Or should the gap remain where it is if both parties are happy with their own cultures? Whatever decision the teacher makes, he/she can only evaluate all the pros and cons if he/she is fully aware of the outlining cultural differences. Culturally based misunderstandings between teachers and students can not only lead to conflicts and frustration on both sides, they can even force a teacher out of job in countries where students' evaluation of teachers is a part of employment contract (Ryan, 1998).

It is unrealistic to suggest that teacher training courses could inform teachers about culturally-based requirements of students in all cultures, but it is absolutely necessary to make future teachers aware of the existence of culturally-based differences in students' expectations of teachers' performance and to suggest to them areas where cultural differences are likely to be found. A bank of literature should be created which would arm teachers with a clear picture of what students in particular cultures want from them. The existing vacuum in the literature on cross-cultural studies of students' expectations of their language teachers outlined by Oxford and Anderson (1995) can only be filled by further research into this field.

We hope that deeper understanding of students' needs would help to create more friendly environment for language teaching and learning.

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A Study of Foreground and Background Structures in English Written Narratives by Teacher College Students in Taiwan*

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Abstract

This study from a more global, discourse-oriented perspective investigates the foreground and background structures of English written narratives by students from nine teachers colleges in Taiwan. 175 narrative writings randomly selected from 1,396 ones on the topic “A Devastating Earthquake” by teachers college students are analyzed and discussed in terms of manifestations. The results show that the students manifest backgrounding and foregrounding information through different devices, especially syntactic structures and semantic aspectual forms. Besides, some characteristics of manifestations are pointed out in the foregrounding and backgrounding. Also, the data show that some of the students misunderstand what main events denote, which results in a discrepancy between students’ perception of main events and their manifestations and which implies the importance of applying the theory and practice of discourse grounding into English teaching with regard to narrative writing.

Motivation and Background of the Study

Information units in narrative discourse are broadly classified into two major types according to the function they serve: those pushing forward the advancement of the main story line are generally referred to as “foregrounding” and those providing supportive, descriptive information for the advancement of the story line, as “backgrounding” (Givon, 1979, p. 54). Some studies have been conducted to analyze the distinction between foreground and background information and the devices for manifesting information flows (Hopper 1979; Reinhart 1984; Caenepeel 1995; Fleischman 1995). In recent years, in the field of teaching English as a foreign language in Taiwan, several studies have started to apply the concept of grounding into narrative writing (Chang 1997; Chan 1998; Chen 1999). However, few attention has been paid to teachers college students’ English writing ability, not to mention their ability to write narratives. This study, from a more global, discourse-oriented perspective, tries to fit the theories of discourse grounding into the teaching of narrative writing of teachers college students in Taiwan.

Review of Related Literature

In this section, we will review some of the most representative studies related to the structures of narratives, grounding functions, and manifestations of grounding.

*This study financially sponsored by the National Science Council of the Republic of China was orally presented at the Conference of the FLEAT IV. I was impressed with the audience attending the Conference for their interest in and discussion of discourse analysis of written narrative in terms of its usefulness to teachers. Special thanks would go to Professor Marc Mallet, Professor Judy Noguchi, and Professor Chizuko Suzuki for their invaluable comments of various issues in this article.

Story, Discourse, and Structure of Narrative

A narrative can be regarded as “a linguistic production undertaking to tell of one or several events” (Genette 1980:30). It contains two main parts: a narrative story and a narrative discourse. The former is the content or chain of events as well as the existents, while the latter is the expression, the means by which the content is conveyed (Chatman 1978: 26). A narrative is “not simply a linear sequence of events, ordered chronologically, but a configuration of events that has ‘texture’ or ‘focus’, an institution in which all events are not created equal” (Fleischman 1985:854). In other words, narratives are not randomly organized. According to Labov (1972, p.363-364), fully-formed narratives contain six elements: a) abstract, b) orientation, c) complicating action, d) evaluation, d) resolution, and 6) coda. In narratives, the distinction of the foregrounding and backgrounding is based on the discourse function which information units serve. Four criteria, which are compatible but not mutually exclusive, are advantageous for determining such a distinction. They are a) sequentiality, i.e. whether the situations are on the time line of narratives, b) importance, i.e. whether the situations are more intrinsically important than others for human beings or of human interest, c) causality, or importance for plot development, i.e. whether the situations serve to advance the plot of the narrative, and d) predictability or expectability, i.e. the degree to which an element is unpredictable or unexpected in a given context (Fleischman, 1985).

Studies on Grounding Manifestations

Since foregrounding and backgrounding reflect the language of actual story line and that of supportive material, linguists and researchers have focused their studies on syntactic and semantic devices which manifest the two types of information units. Main vs. subordinate clauses are the most practical syntactic structures in manifesting grounding. In English, foregrounding tends to be manifested syntactically as main clauses, while backgrounding, as subordinate clauses (Givon, 1979). For example,

- (1) While Peter was coming downstairs, Mary slipped out the front door, went around the house, and came in the back door.

Three story events are depicted in the main clause, including Mary’s slipping out the front door, going around the house, and coming in the back door. With the elaborating information in the subordinate clause introduced by while, the clause combination gives a vivid picture in which the three events happened under the circumstance and temporal condition of Peter’s coming downstairs. In terms of discourse function, the while-clause provides background information against which Mary’s successive actions occur.

Another syntactic structure which has been pointed out as a powerful means for marking backgrounding of narratives is embedding, which refers to clauses or structures embedded within another finite, independent clause (Reinhart, 1984; Matthiessen and Thompson, 1988; Chan, 1998). Materials manifested in embedding clauses are not normally foregrounded, but provide background, supportive information for the main event to be foregrounded as shown in the following example (Chan, 1998).

- (1) The man *who was in charge of the preschool* told us its history. (A relative clause: Rc: 12080: 7: Bd)

Detached participles are syntactic structures which serve as a device that allows the speaker/writer to present certain material as background against which certain other material can be put forth as “figure” in the Gestalt sense (Reinhart, 1984). For example,

- (3) “Do you find it a tight squeeze, then” she said, *turning to Aaron once more*.

In (3), the detached participle *turning to Aaron once more* provides additional information that functions to amplify and elaborate the co-occurrence of the woman’s talking and her another action. In this discourse, there is no explicit connection, either temporal or logical, drawn between the background material manifested in the detached participle and the figure material manifested in the main clause.

Initial participles are another device for manifesting grounding in narratives. From a discourse-oriented perspective, initial participles serve to provide background information against which the main story line advances. Look at the following example.

(4) Walking into the station, I was surprised by [the] crowded people.

According to Chan (1998), initial participles present certain background information, leaving the main story to be expressed in the main clause. In (4), the foregrounded event is the narrator's being surprised by crowded people and his surprise occurs upon the narrator's walking into the station. In other words, the initial participle here provides temporal information (i.e. information which can be interpreted as connected by when or after) and spatial, setting information (i.e. the situation in the station), under which the main events are foregrounded and the main story line advances.

Aspect, as a functional category in narrative discourse, has been applied to the study of the relationship between aspectual structures and grounding manifestations (Hopper, 1979; Andreasen, 1981; Fleischman, 1995; Chan, 1996). In his analysis of *the Prodigal Son*, Chan (1996) points out that foregrounding is manifested through perfective aspectual forms which denote telic, dynamic, and punctual characteristics of verbs, while backgrounding is mainly manifested through imperfective aspectual forms such as copulative verbs, imperfective progressives, stative verbs, negators or modal auxiliaries, and mental processes.

Discussions above reveal that there are different syntactic and semantic devices for manifesting backgrounding and foregrounding. Study of the structures in narratives helps understand how the main events and supportive materials in narratives are manifested through different devices.

Methodology

Subjects

The subjects in this study are 1396 students from 41 classes of the nine teachers colleges in Taiwan. Most of them are freshmen and some of them take courses related to English teacher training program.

Data Collection

The 921 (September 21st) Chi-Chi earthquake in 1999 was a disaster for people in Taiwan. The strongest earthquake in the past 100 years not only ruined many houses but also claimed the lives of many citizens. Thus, "A Devastating Earthquake" was given as the topic of this narrative writing. Instructors who helped collect the data were informed the necessary directions for students' writing such as telling the students that there would be a composition writing on the previous earthquake, giving a brainstorm in the beginning of the class, and controlling the writing time span within two classes. 18 of these subjects were further required to write down the main events of their narratives so that the researcher can examine what the main events were and how they manifested these events and other supportive materials through different devices.

Analysis of Manifestations

Backgrounding

All the writings in our data have more than one paragraph. Most of them begin with an introductory paragraph describing the background of the topic such as knowledge of earthquake or personal experience about earthquake as shown in (1), while some writings begin with an abstract as shown in (2) and (3).

- (1) Taiwan is in a falling [sic] area. There are more than ten thousands of earthquakes in Taiwan in one year. Some can be sensed, but others can't. They are due to the expansion and contraction of earth's crust and continental drift. (891023)
- (2) At 1:47 a.m. September 21st, 1999, Taiwan was hit by its most powerful earthquake in 100 years. Over 2000 people died and tens of thousands people lost their homes.
I still remember..... (893100)
- (3) 921 earthquake is a serious affection to Taiwan. We lose not only money but also many lives. All people in Taiwan understand the power of this earthquake impressively. Many Taiwanese are scared of their present circumstance. ...(894233)

An abstract gives the reader what in a nutshell this story is about (Toolan, 1988, p.152). In (2), before the student writer begins to tell his story in the second paragraph, he briefly describes in the first paragraph the devastating earthquake along with the temporal material and the serious damage caused by the quake. Obviously, the abstract provides a brief picture of the story, so it is not regarded as the foregrounding in terms of discourse function. With respect to its manifestation, some verbs are like the verbs occurring in the proper telling of a narrative such as the verbs in boldface "...Taiwan was hit by its most powerful earthquake...Over 2000 people died and tens of thousands people lost their homes", while some are states, static verbs, or verbs in the present tense such as is a serious affection to Taiwan..., understand the power..., are scared of their present circumstance, etc.

Orientation, specifying the participants and circumstances, especially of place and time of the narrative, is another component manifesting the backgrounding of a narrative (Toolan 1988, p. 154). It is typically composed of non-narrative clauses and serves to "identify in some way the time, place, persons and their activity or the situation prior to the beginning of the complicating action" (Andreasen 1981, p. 13). In our data, the following expressions in boldface are utilized to orient the related situation for the appearance of the upcoming event.

- (4) On September 21, the magnitude 7.6 tremor killed more than 2300 persons and damaged 82000 housing units, with its epicenter in central Nantou county, where(891003)
- (5) On September 21, a devastating earthquake happened in Taiwan. It was almost two o'clock in the morning, so many people were sleeping. This earthquake was so destructive that a lot of buildings and(8893293)

These expressions highlight the orientation of time, place, and situation, which presents information needed for the listener to understand new information because what people who listen to or read a story want to know is not only the main events, but also when and where the events happen. Orientation is mainly manifested through verbs denoting states or through static verbs describing attributes, location, circumstance, etc.

In our data, the structures for manifesting the backgrounding in the body paragraphs appear in the different constructions. The first construction is a subordinate clause followed by a main clause or a main clause followed by a subordinate clause. The subordinate clause denoting circumstantial relationship of time, reason, concession serves to present the grounding function as shown in the following examples.

- (6) I was lying on my bed when the earthquake hit...(898043)
- (7)I was waken by a strong earthquake. When I woke up, I felt a strong tremor and the noisy sounds of vibration...As I went back to the dorm, I listened to the news and read the newspaper. (893087)

The main events advancing the story line are manifested by more dynamic verbs in the main clauses, while the backgrounding providing supportive information of time and reason is manifested in subordinate clauses. For example, in (6), there are two actions, i.e. the student's lying on the bed and the hitting of the earthquake. The latter

action introduced by the subordinate conjunction “when” referring to temporal orientation functions as a backgrounding, which in turn highlights the corresponding main event.

The second type of construction contains an initial participle and a main clause.

- (8) When seeing the TV[sic] , we see [saw] many houses collapse and still many people were covered by the building. As seeing this sight, I couldn't resist burst into tears.(895013)
- (9) Hearing my daughter's screaming, I ran to *her bed to pacify her.* (891166)

The structure of initial participles is a powerful device for manifesting the backgrounding of narratives. However, this type of structure is not commonly used by the students. In (8), the foregrounded event is the student narrator's seeing many houses collapse and many people's being covered by the building. However, the student's seeing something happen occurs upon his watching TV. In other words, the information manifested in the initial participle functions as the backgrounding for the main story event to be foregrounded.

The third type of construction used by students to manifest the backgrounding is detached participles. The following are some of them.

- (10) They worked day and night, dedicating themselves to the sacred but challenging job. (891159)
- (11) I was in the dark, waiting for the lights to come back. (891166)

These examples appear in the body paragraph where the main story line advances. In these examples, the main events are “worked day and night”, and “was in the dark”. The backgrounded material manifested in the detached participle and the foregrounded event realized in the main clause are concurrent. With this feature of simultaneity, the backgrounded information manifested in the detached participle describes, amplifies, or comments on the event in the story line manifested in the main clause. Although detached participles are a good device for presenting the backgrounding, they are not widely used, which may be due to the students' not being familiar with this structure and its function in terms of grounding.

The fourth type of structures applied to manifest backgrounding is embedding, which is widely employed as the following examples show.

- (12) Hospitals and blood banks have been filled with people who were wishing to donate Blood. Many people also volenteed [sic] to go to the damage area to offer help and to help the children who lost their loved ones during the quake to rebound from the tragedy. (893085)
- (13) There were many foreign rescue works [sic]teams coming to Taiwan to help with rescue efforts...(896043)

These sentences contain an independent clause with a relative clause or a participial phrase embedded. The function of grounding is served in the main clause. The embedding serves to provide more information about its antecedent in the main clause and functions as the backgrounding of the main event as shown in (12) and (13).

The material which supports or amplifies the main events may precede or follow them, while the material which comments on or evaluate the events usually appears after them. Comments and evaluations occur either after an event or in the concluding paragraph. In both cases, the material does not belong to the main story as shown below.

- (14) *I think the most important thing is to have the reconstruction plan. We cannot predict when the earthquake will happen; therefore, what we can do is to make preparations for it...*(897013)

- (15) ...I even can't tell where I should go. This place where I grew up was broken. However, because of the earthquake, I rediscovered the bright side of people...I hope his kind of damage will never happen again, and disaster area can be rebuilt as soon as possible. (896153)

Examples above reveal some characteristics. First, verbs in these structures like “hope”, “think”, etc. denote states or mental process rather than dynamic actions. Second, the narrator's personal involvement is conveyed. As seen in our data, first person pronoun “I” and inclusive “we” are frequently utilized to express the narrator's opinions. Third, a shift of time from the narrative past tense to the current present tense is common. This is due to the fact that before the closing part, the narrator often exits “from the marked past narrative to present deictic mode” and “resume normal use of present deictics to designate relatedness to the present context of situation” (Labov 1972; Toolan 1988). Fourth, the students evaluate happenings directly or indirectly by “comparators” (e.g. negation, modality and modulation, and futurity), all of which are encoded in the auxiliary verbal elements (Toolan 1988:160).

Foregrounding

In our data, the foregrounding is mainly manifested through simple sentences, compound sentences, or the main clauses of complex sentences as shown below.

- (1) The earthquake occurred about one o'clock in the morning on that day. Many people felt surprised and scared, and they started to run out. (893283)
- (2) ...After it stopped, I went down the floor...I finally found some little light in front of me...I found grandmother in the living room, and she told me...About thirty minutes later, I went to my bedroom and went to bed again...(893323)
- (3) I was lying on my bed when the earthquake hit...I felt the shock going through the house and felt it terrible. At the same time, many neighbors talked about this earthquake with us. They never suffered this devastating earthquake like that. “It was too terrible”, old men said. (898043)
- (4) When I was sleeping something happened to me...I fell in sleep again because I was exhausted for playing video games. In that morning, I got up so early...I immediately turned on the TV....(898093)

Some characteristics can be found in these manifestations. First, each sentence conveys a complete information unit. The main events are presented in simple sentences, compound sentences, or the main clauses of complex sentences. Second, the main events in foreground structures are manifested through verbs or verbal phrases in the past tense, for narratives require the narrators to retrieve and retell what happened in the past time. Third, most of the verbs in boldface denote dynamic actions rather than states or static happenings. Foregrounding not only reflects the temporal ordered events but also carries what are regarded as important materials or the “backbone” of the story (Thompson, 1987, p. 435-436).

Relationship among Narrative Structures, Syntactic Structures, and Grounding

Chen (1999, p. 137) points out that information structure are closely related to syntax, and the function of the information conveyed by a given syntactic structure depends on its position in the hierarchy of syntax, as shown below:

sentence -> main clause->subordinate clause-> modifying phrases...

In this study, we conclude that the organization of a narrative further determines the location of the main story line in a narrative. The relationship among narrative structure, discourse function and manifestation can be depicted as shown in Table 1.

Table 1. Relationship among Narrative Structure, Discourse Function, and Manifestation

Composition Structure	Narrative Structure	Discourse Function	Manifestation	
			Syntactic device & tense	Semantic device
Introduction	Abstract	Backgrounding	States, static verbs, existents	
	Orientation	Backgrounding	Temporal, spatial phrases	Imperfective forms
	Main Events	Foregrounding	Simple S., Compound S., Main Clause (Past tense)	Perfective forms Dynamic Realis
Body Paragraph(s)	Supporting	Backgrounding	Sub. Clause, Detached Participle, Initial Participle., Embedding	Imperfective forms
	Comment Evaluation	Backgrounding	Structures with states, static verbs and comparators	Imperfective forms Comparators Irrealis
Conclusion	Coda	Backgrounding	Structures containing states, static, process, verbs in present tense	Comparators Irrealis

Perception of the Main Events and Manifestation

To examine whether there is a discrepancy between students' perception of the main events and their manifestation, we asked 18 students to write down the main events in their writings. The findings obtained from our analysis are as follows. First, some of the students do not understand what an event means, so comments and evaluation are included in their list of main events as shown in the following original.

1. 921 has become our national suffering day.
2. I still remember being shocked and awakening by the forcefully horrifying earthquake.
3. Foreign secure organizations from many companies, liberally give Taiwan a big hand.
4. The most important thing we must pay attention are [sic] to rebuild our home, settle sufferers' life, take care of the orphan, and the soul reestablishment. (8893095)

Second, one student has a better understanding of what the main events are. However, the last one in the list is not the main event.

1. The early morning when the earthquake happened, I was in "Holiday KTV" with my friends.
2. We were really worried about our family and other friends.
3. More than two thousands of people were killed and injured by this strong quake.
4. We should see the bright future ahead. (893097)

Third, one of the students did not list the main events. The main events were put in the second paragraph and they are numbered. Let's look at the original, which is the second paragraph and whose errors are not marked and corrected.

(1) We were frightened by the strong earthquake at 1:47. (2) After a succession of violent vibrate [vibration], everyone screamed and ran away houses. (3) The earthquake cut power lines and caused power failure. (4) It plunged millions of houses into darkness. (5) It forced roads and railways to cut, as a result, the government ordered offices and schools [to] shut. (6) Thousands of buildings were collapsed. (7) The damage to human's life and property and agriculture amounted to countless. (8) Many people were homeless and displaced. (9) The earthquake is one of the most natural disaster before. (893099)

Each sentential unit expresses a complete thought. In terms of manifestation, this kind of structure is the most possible candidate for manifesting the foregrounding. In fact, expressions such as “were frightened”, “screamed and ran away”, “cut power lines and caused power failure”, “plunged millions of houses into darkness”, and “ordered offices and schools to shut” denote dynamic actions, which in turn function as the foregrounding. However, sentences from (6) to (9) should be regarded as a description, a report, or a comment rather than dynamic actions. They actually serve the backgrounding function.

Analyses above reveal that some of the students know how to arrange their narrative structure and put necessary content in the framework, while some of them misunderstand the meaning of main events and make many a mistake in their writing, including syntactic structures, spelling, semantics, and voice. These mistakes will reduce the quality and may affect the coherence of the writing. Take the following excerpt for example:

(1) On the night, I was fell asleep [had fallen asleep] already. (2) When the quake began to swing, my roommates were shouting, [shouted.] they [They] kept on calling my name.

The first error is in the use of voice. It is wrong to use the passive to refer to someone's falling asleep. The second error results from the wrong manifestation of situations in (2). It is possible that the student's roommates were doing something such as taking a shower, singing a song, or chatting when the quake occurred. However, unless something happened before this happening point and caused her roommates to shout for a period of time, it is impossible for her roommates to be shouting at the time point when the quake occurred. We think that the student writer know the chronological order of the event. However, she does not have a better understanding of the function and manifestation of certain structures.

The third error is in the run-on sentences. There are two successive actions happening right after the quake. The following in which the first sentence functions as a temporal and situation orientation is one of the possible manifestations: On the night, I fell asleep deeply. When the quake began to swing, my roommates shouted, and then they kept on calling my name.

Conclusion

In this study, we first conducted an in-depth investigation of the manifestations of the foregrounding and backgrounding. The outcomes of the investigation show that the structures of main vs. subordinate clauses, embedding, and phrases as orientation are three commonly-used structures. Detached participles and initial participles, though are good devices for marking the backgrounding, seldom appear.

Besides, our analyses reveal that some of the students misunderstand the concept of main events. Criteria for determining the foregrounding and backgrounding vary from culture to culture. For example, sequentiality, importance, causality or importance for plot development, and predictability as pointed out by Fleischman (1985:859-60) are practical. Other content criteria such as temporal criteria, functional-dependency criteria, and culture-dependent criteria are also practical in analyzing the discrepancy between students' thinking and manifestations (Reinhart 1984). A better understanding of the relationship between grounding and narratives will improve the students' ability of narrative writing. Therefore, it is a good step to apply the theory of discourse grounding into the practice of English teaching, especially narrative writing. Further research to examine the effect of this application will contribute to the success of the writing class.

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Style Elements in Foreign-Language Writing among Japanese College Students

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Abstract

This study investigated the outstanding style features of Japanese college writing both for surface detail and more fundamental characteristics. The 33 students who took part in this study were English major and minor students enrolled in Basic English Composition at a Japanese national college. Their compositions were analyzed for overuse or under-use of particular features relative to the standard conventions of academic register. We classified the results along a continuum from academic elements representing an informational and abstract conceptual focus to conversational elements, representing highly involved, interactive and affective discourse. Among the features isolated were pronouns, Wh-questions and discourse particles, hedges, amplifiers and emphatics, type-token ratio, word length, nominalizations, gerunds, downtoners, seem/appear, private verbs and public verbs speaking like, 'say, tell, and speak'. Through this, we hope to clarify why the academic English writing for Japanese students falls short of the rhetorical expectations of academic prose.

Introduction

In general, EFL students are often unaware of the differing communicative needs of various genres of writing. Academic prose, press reportage, fiction, for example, all have a different communicative purpose and as such, use the grammatical and rhetorical resources of English in different ways. Academic writing can be characterized as highly informational, non-narrative, explicit, and abstract. Japanese students' background and experience in writing composition does not include familiarization with these conventions. In Japan, composition instruction has usually emphasized the consolidation of grammatical components and translation from Japanese to English. As a result, composing successful communicative academic rhetorical prose in English is a significant academic challenge for Japanese EFL students.

In Nishigaki and Leishman (2000, 1999) we examined Japanese college-level academic writing in terms of four categories: content knowledge; language system knowledge (style and grammatical elements); context knowledge; and writing process knowledge. We found in these previous studies that it was among the style-based elements that students deviated most widely from the accepted conventions of academic discourse. In order to investigate these initial findings more deeply and to determine what specific linguistic elements accounted for the deviation between the students' target and their production ability, we applied Biber's model of linguistic dimensions (1988).

Biber's linguistic dimensions represent quantitative research that identifies groups of linguistic features that regularly co-occur in texts. These patterns of features represent an underlying communicative function. Analysis of a correlation matrix of these linguistic features, are represented linearly, as 'factors', in a complementary pattern of positively and negatively weighted features that co-occur with high frequency. Biber's Factor 1 represents the most basic dimension of variation among spoken and written texts in English. We adopted 23 key features of Factor

1, from Biber's exhaustive investigation of 67 features, which registered a score of $\pm .50$ or above and were related to our previous studies. Biber provides an appendix of the frequency counts for a variety of registers, including two used in this study, academic prose and face-to-face conversation.

A close analysis of how these 23 features appeared in students' compositions provides a very detailed picture of where students' strengths and weaknesses lie along the linguistic continuum of text features with an informational focus such as academic prose, to text features that have an involved focus, such as spoken conversational English. Although Biber points out that student essays are unlike any of the published genres of English in that they use only surface forms of academic writing, and are relatively non-informational and persuasive in form, we agree with Shaw (1998) that there is merit in a global approach that generates enough numbers for statistical analysis. Hence, we have used Biber's model as a tool to gain a deeper insight into the gap between students' compositions and formal academic rhetoric by contrasting the results of our tabulations with Biber's results for the genres of academic prose and face-to-face conversation.

Objective

The objective of this study was to investigate the surface features and more fundamental linguistic features of Japanese college writing that contributed to the deviation from academic rhetorical text.

Methodology

Students

The subjects of this study were 33 students enrolled in Basic English Composition at a national university in Japan: 19 English majors, 12 English minors, and 2 auditors. The primary objective of this freshman writing course was for students to develop schemata for written academic discourse.

Data Collection

Data for this study was collected through a take-home composition assigned to the students at the start of the academic year. Students were asked to compare or contrast two topics and submit their composition within two weeks.

Data Analysis

Students' compositions were stored on a computer and analyzed for surface features, text length and topic selection, among others. In addition, compositions were analyzed for more fundamental characteristics: The frequencies of 23 linguistic features were tabulated both by hand and computer. The linguistic features isolated were chosen from Biber (1988) to illustrate the style elements that were the focus of our study. The elements were past tense, present tense, 1st person pronouns, 2nd person pronouns, 3rd person pronouns, pronoun IT, Wh-questions, nominalizations, gerunds, nouns, BE as main verb, prepositions, type-token ratio, word length, downtoners, hedges, amplifiers, emphatics, discourse particles, public verbs, private verbs, seem/appear, and contractions. We used Biber's classifications of the features as the standard for our counts. The frequency counts were normalized according to the following formula: *Frequency Counts of a Linguistic Feature / Length of the Text X 1000* (Biber, 1988).

Results

Results Overview

The results of our analysis of the surface characteristics of students' compositions are shown in Table 1. Students' compositions had a total of 9,579 words, 184 paragraphs, and 784 sentences. On average a composition consisted of 290 words, 5.6 paragraphs, 4.3 sentences per paragraph, and 12.2 words in a sentence.

Table 1. Students' Composition Overview

Surface Features	#
Total # of Words	9,579
Total # Paragraphs	184
Total # of Sentences	784
Mean # of Words in a Composition	290
Mean # of Paragraphs in a Composition	5.6
Mean # of Sentences in a Paragraph	4.3
Mean # of Words in a Sentence	12.2

Topic Selection

We then analyzed the degree to which students went beyond their common knowledge and researched an unfamiliar subject area. The results are shown in Table 2. The number of student compositions whose topic dealt with an immediate subject area was 26 or 78.8%. The number whose topics dealt with a distant subject area was 7 or 21.2%. Immediate subject area topics included: *Candy and Chewing Gum*, *Baseball and Soccer*, *Two Different Types of Shopping Bags*. Distant subject area topics included: *The differences between American university students and Japanese university students*, *Japan of Today and Former Japan*.

Table 2. Comparison of Immediate and Distant Subject Areas

Topics	#	%
Immediate Subject Area	26	78.8%
Distant Subject Area	7	21.2%

Linguistic Features

The following table shows how the 23 features we isolated for students' compositions (SC) compared with Biber's results for academic prose (AP) and face-to-face conversation (FFC). The figures in the table show the frequency counts of the linguistic features normalized to a text length of 1000 words, except for TTR and word length.

Table 3. Frequency Count of 23 Features in Comparison with Biber

Linguistic Features	AP	SC	FFC
Past Tense	21.9	30.3	37.4
Present Tense	63.7	153.0	128.4
1st person Pronouns	5.7	36.3	57.9
2nd person Pronouns	0.2	5.4	30.8
3rd person Pronouns	11.5	29.3	29.2
Pronoun IT	5.9	13.9	20.0
Wh-questions	0.0	1.2	0.7
Nominalizations	35.8	15.7	9.2
Gerunds	8.5	9.9	4.7
Nouns	188.1	264.0	137.4
BE as Main Verb	23.8	53.3	39.5
Prepositions	139.5	110.6	85.0
Type-token Ratio	50.6	41.9	46.1
Word Length	4.8	4.4	4.1
Downtoners	2.5	3.5	1.5
Hedges	0.2	5.2	2.1
Amplifiers	1.4	6.4	6.0
Emphatics	3.6	10.9	12.2
Discourse Particles	0.0	5.6	3.9
Public Verbs	5.7	2.9	8.8
Private Verbs	12.5	12.3	35.4
Seem/Appear	1.0	1.8	0.4
Contractions	0.1	6.6	46.2

Type-token Ratio and Word Length

Type-token ratio (TTR) is lower in conversation texts than in written registers. The results of our analysis are shown in Table 4. Students' compositions had a TTR of 41.9 compared with Biber's mean score of 50.6 for AP and 46.1 for FFC. The second feature we examined was word length. Shorter words are more frequent and more general in meaning; longer words convey more specific, specialized meanings. The results of our analysis are shown in Table 4. The average word length in students' compositions was 4.4 letters, compared with Biber's mean length of 4.8 for AP and 4.1 for FFC.

Table 4. Comparison of Type-Token Ratio and Word Length

Linguistic Features	AP	SC	FFC
Type-token Ratio	50.6	41.9	46.1
Word Length	4.8	4.4	4.1

Noun Elements

Nominalizations refer to all words ending in *-tion*, *-ment*, *-ness*, or *-ity*. Gerunds are verbal forms serving nominal functions. Nouns refer to all nouns found in the dictionary, excluding nominalizations and gerunds. The results of our analysis are shown in Table 5. Students' compositions had a nominalization frequency of 15.7 compared with Biber's mean frequency of 35.8 for AP and 9.2 for FFC. They had a gerund frequency of 9.9 compared with Biber's mean frequency of 8.5 for AP and 4.7 for FFC. Finally, students' compositions had a noun frequency of 264.0 compared with Biber's mean frequency of 188.1 for AP and 137.4 for FFC.

Table 5. Comparison of Noun Elements

Linguistic Features	AP	SC	FFC
Nominalizations	35.8	15.7	9.2
Gerunds	8.5	9.9	4.7
Nouns	188.1	264.0	137.4

Academic Hedging: Downtoners, Seem/Appear

Two hedging strategies common to academic discourse are downtoners and seem/appear. Downtoners are words like, *almost*, *nearly*, or *only*. They are used to lower the force of the verb. Seem and appear are used similarly, or as markers of evidentiality (Chafe, 1985 (Biber, 1988)). The results of our analysis are shown in Table 6. Students' compositions had a downtoners frequency of 3.5 compared with Biber's mean frequency of 2.5 for AP and 1.5 for FFC. They had a seem/appear frequency of 1.8 compared with Biber's mean frequency of 1.0 for AP and 0.4 for FFC.

Table 6. Comparison of Downtoners and Seem/Appear

Linguistic Features	AP	SC	FFC
Downtoners	2.5	3.5	1.5
Seem/Appear	1.0	1.8	0.4

Public and Private Verbs

Public and private verbs illustrate the differences in a text with an informational focus and text that has an involved focus. Public verbs are speech act verbs, e.g. *say* and *explain*. Private verbs express intellectual states, e.g. *believe* or *discover*. The results of our analysis are shown in Table 7. Students' compositions had a public verb frequency of 2.9 compared with Biber's mean frequency of 5.7 for AP and 8.8 for FFC. They had a private verb frequency of 12.3 compared with Biber's mean frequency of 12.5 for AP and 35.4 for FFC.

Table 7. Comparison of Public and Private Verbs

Linguistic Features	AP	SC	FFC
Public Verbs	5.7	2.9	8.8
Private Verbs	12.5	12.3	35.4

Verb Elements

The results of our analysis on verb elements are shown in Table 8. Students' compositions had a past tense frequency of 30.3 compared with Biber's mean frequency of 21.9 for AP and 37.4 for FFC. Students' compositions had a present tense frequency of 153.0 compared with Biber's mean frequency of 63.7 for AP and 128.4 for FFC. They had a BE verb frequency of 53.3 compared with Biber's mean frequency of 23.8 for AP and 39.5 for FFC.

Table 8. Comparison of Verb Elements

Linguistic Features	AP	SC	FFC
Past Tense	21.9	30.3	37.4
Present Tense	63.7	153.0	128.4
BE as Main Verb	23.8	53.3	39.5

Pronouns

The results of our analysis on pronouns are shown in Table 9. Students' compositions had a 1st person pronoun frequency of 36.3 compared with Biber's mean frequency of 5.7 for AP and 57.9 for FFC. They had a 2nd person pronoun frequency of 5.4 compared with Biber's mean frequency of 0.2 for AP and 30.8 for FFC. They had a 3rd person pronoun frequency of 29.3 compared with Biber's mean frequency of 11.5 for AP and 29.2 for FFC. Finally, they had an IT pronoun frequency of 13.9 compared with Biber's mean frequency of 5.9 for AP and 20.0 for FFC.

Table 9. Comparison of Pronouns

Linguistic Features	AP	SC	FFC
1 st Person Pronouns	5.7	36.3	57.9
2 nd Person Pronouns	0.2	5.4	30.8
3 rd Person Pronouns	11.5	29.3	29.2
Pronoun IT	5.9	13.9	20.0

Wh-Questions, Discourse Particles and Contractions

Rare features in AP are Wh-questions, discourse particles, e.g. *anyway*, *now*, and *well*, and contractions. The results of our analysis are shown in Table 10. Students' compositions had a Wh-questions frequency of 1.2 compared with Biber's mean frequency of 0.0 for AP and 0.7 for FFC. They had a discourse particle frequency of 5.6 compared with Biber's mean frequency of 0.0 for AP and 3.9 for FFC. Finally, they had a contraction frequency of 6.6 compared with Biber's mean frequency of 0.1 for AP and 46.2 for FFC.

Table 10. Comparison of Wh-Questions, Discourse Particles and Contractions

Linguistic Features	AP	SC	FFC
Wh-questions	0.0	1.2	0.7
Discourse Particles	0.0	5.6	3.9
Contractions	0.1	6.6	46.2

Hedges, Amplifiers and Emphatics

Some features common to spoken English are hedges, e.g. *maybe*, *kind of*, and *sort of*; amplifiers, e.g. *very*, *highly*, and *totally*; and emphatics, e.g. *a lot*, *really*, and *so+adj*. The results of our analysis are shown in Table 11. Students' compositions had a hedges frequency of 5.2 compared with Biber's mean frequency of 0.2 for AP and 2.1 for FFC. They had an amplifiers frequency of 6.4 compared with Biber's mean frequency of 1.4 for AP and 6.0 for FFC. Finally, they had an emphatics frequency of 10.9 compared with Biber's mean frequency of 3.6 for AP and 12.2 for FFC.

Table 11. Comparison of Conversation Hedges

Linguistic Features	AP	SC	FFC
Hedges	0.2	5.2	2.1
Amplifiers	1.4	6.4	6.0
Emphatics	3.6	10.9	12.2

Surface Features

Among the results on the overview of students' compositions (Table 1), the most interesting was the number of sentences per paragraphs. The average paragraph was made up of only 4.3 sentences. Students appeared to be unaware of the requirements of a standard paragraph.

As seen from our results on topic selection (Table 2), many of the students picked topics from an immediate subject area, about which they had personal knowledge or experience. Only a fifth of the subjects chose topics from a distant subject area, which required investigation of outside resources. It is reasonable to assume the majority of students completed their writing tasks based exclusively on their own general knowledge and used their personal experience as support or to illustrate their ideas.

Fundamental Features

An analysis of the 23 linguistic features chosen revealed two significant tendencies. The first was a lack of an informational and abstract conceptual focus, most clearly illustrated by the results for TTR, word length, noun elements, academic hedges, public and private verbs, which we grouped under the heading academic elements. The second tendency was towards a highly involved and interactive discourse, best illustrated by the results on verb elements, pronouns, Wh-questions, discourse particles, contractions, hedges, amplifiers, and emphatics which we grouped under the heading conversational elements.

Lack of Academic Elements

Our results on TTR (Table 4) revealed that students' compositions were lower than the mean score for FFC, considered the lowest of all registers. This suggests little variety of vocabulary and an unusually high degree of repetition. It's clear that students lack the necessary lexical resources to write credibly in an academic style. The results on word length (Table 4) however, show more moderate findings. The average word length for students' compositions was midway between AP and FFC. Word length reflects the difficult production task of precise lexical choice. Our TTR findings, together with our word length, suggest students may have translated key phrases from the Japanese using a dictionary and used them repeatedly.

The findings on noun elements (Table 5) revealed some mixed results. Students' compositions reveal a relatively low number of nominalization compared to AP, however, higher than FFC. Nominalization is considered as one of the most fundamental distinctions among registers (Biber, 1988) and means a highly abstract or informational focus. Students used a high number of gerunds and nouns, though, the gerund finding may represent the tendency to repeat the same gerunds as the subject of a sentence, e.g. *Chewing itself is reasonable act to relax*, or *Chewing is a continuous act for something tender*. In combination with the low TTR above, this suggests that students tended to repeat the same nouns in lieu of using synonyms or other strategies.

Our examination of academic hedges (Table 6) reveals that students demonstrated a strong use of downtoners, one and a half times the average number used in AP and over twice the number used in FFC. Downtoners lower the force of the verb to indicate probability or politeness to the addressee (Holmes, 1984 (Biber, 1988)). Our results also showed students used *seem* and *appear* (Table 6) excessively. Though *seem* and *appear* are considered academic hedges marking evidentiality, students tended to use them in conjunction with an attempt to avoid explicit statements, e.g.: *There seems to be more different* [between today and the past], *if I try to find*. Students' excessive use of downtoners and *seem/appear* may suggest a transfer from the Japanese rhetorical convention of avoiding statements that are too direct.

Our results on public and private verbs (Table 7) show that students tended to under-use public verbs. Biber distinguishes public verbs as primarily speech act verbs and private verbs as common in the introduction of indirect statements. Among the private verbs students used, 46% of the verbs were *think* and 85% of these were used at the beginning of the sentence. This suggests the first language transfer of introducing ideas hesitantly, e.g. *Now, I try to think differences between them*, or *At least I think so*.

Excess of Conversational Elements

Our results on verb elements (Table 8) revealed an excessive use of the present tense, over twice the average for AP, and above average for FFC. Similarly, our findings for BE verb were above average for FFC. The present tense is considered common to unplanned speech styles. Students' lack of vocabulary contributed to the over-use of BE verbs. This assumption is supported by our results on TTR.

Our results on pronouns (Table 9) reveal students demonstrated an excessive use of pronouns for AP: over 6 times the average for 1st person pronouns, over 27 times for 2nd person pronouns, over 2.5 times for 3rd person pronouns and twice as many times the average for the pronoun *IT*. Greater pronoun use is associated with an involved style (Chafe, 1985 (Biber, 1988)). Students appeared to write as if they were speaking to someone.

The results on Wh-questions, discourse particles and contractions (Table 10) show that students were unaware of the relative absence of Wh-questions, discourse particles and contractions in academic writing. Of the five discourse particles listed by Biber, the students' compositions, consisted of one particle, *now* (86%). This may suggest that a lack of variety of connectors (Nishigaki & Leishman, 2000) resulted in the overuse of 'now' as a means of calling attention to a new topic.

Our results on hedges, amplifiers and emphatics (Table 11), show that students used an excessive number of conversation hedges, 26 times the norm, as a means of modifying the force of their comments and introducing a

degree of uncertainty or fuzziness in their conclusions (Chafe, 1982 (Biber, 1988)). Among the 16 amplifiers students used, 92% consisted of the word *very*. This included 4 cases of *very very* and 2 of *very very very*. Students' use of emphatics was much closer to FFC than AP. All three are informal strategies that appeal to a listener either to infer from fuzziness in the discourse or to signal solidarity (Holmes, 1985 (Biber, 1988)).

Conclusion

This study was conducted to identify the features that represent the gap between students' production of written English and the standard conventions of academic discourse and ultimately guide teachers and students over the barrier of academic style. From the results of this study we learned the areas of greatest challenge for Japanese freshmen students are the following.

1. A lack of awareness of paragraph organization.
2. The personalization of topics.
3. A lack of explicit nouns and noun expressions.
4. The repetition of the same expressions.
5. The overuse of academic hedges.
6. The overuse of the present tense and BE-verbs.
7. The overuse of pronouns.
8. The use of Wh-questions, discourse particles and contractions.
9. The overuse of informal colloquial hedging strategies.

We believe that if students and teachers focus on these specific areas of study in college-level writing classes, the challenge of producing a written text in an accepted academic style will be achievable.

Acknowledgments

We wish to thank Rieko Kubo for administering the perception tests to the Japanese subjects and Kanae Nishi and Winifred Strange for administering the perception tests to the American subjects. We also thank colleagues at ATR for helping out with pilot studies and for valuable comments on earlier presentations of this study. We thank K. Saitou for the drawing of Fig. 1, and Kris Stewart for her insightful comments about rhythmical differences in Japanese and American frog songs.

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Task-Based Instruction in Large EFL Classes

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Introduction

This paper presents the authors' experiences in using a variety of tasks in large EFL reading and listening classes, which always consists of about fifty to sixty learners with varied English proficiencies. Facing such a large number of students, the traditional grammar-translation approach fails to activate students' participation. Swain (1995) indicates that tasks provide input to learners and opportunities for meaningful language use and therefore may force students to pay close attention during the process of learning. Hence, we use tasks in reading as well as listening classes to make the instruction more student-centered so as to activate the learners' participation and to enhance their listening and reading comprehension. These tasks are mostly use at pre-listening/reading stage as warm up activities or at while-listening/reading stage as a guide for their learning. In general, the pre-listening or pre-reading tasks focus on activating learners' background knowledge or relevant schema. The purpose of while-listening or while-reading tasks is to lead the learners to focus on reading for comprehension or to force them to participate in the learning. We have also made use of the technological aids in the language laboratories to facilitate our task-based listening instruction. For instance, we used the computer software such as PowerPoint to present the tasks. And through the Language Learning System (Panasonic WE-7900), teachers can get students' responses and give the students immediate feedback, which highly interests them and is able to attract their concentration. We have included in the appensix the taks designed or adapted for use in our classes during the past academic year.

Benefits of Using Task-Based Instruction

1. Tasks can be a good tool to force students to concentrate on comprehension instead of word for word processing.
2. With tasks to complete, students have to become active in the learning activity.
3. Students can learn through peer cooperation.
4. Group work can arose their sense of honor and spur them to devote themselves to the task.
5. The tasks impose responsibility on the students because they are required to give a report (oral or written). Consequently, their participation is increased.
6. Different kinds of tasks appeal to different abilities (such as verbal and art ability) and thus provide the students with a chance to activate and develop their multiple intelligences.
7. Opportunities to do oral reports enhance learners' presentation skills.
8. Tasks and group works almost take care of all the students in a large class. Every student has to participate in fulfilling the tasks.

Difficulty of Using Task-Based Instruction

It takes a lot of time to design the tasks and required the teacher to do a lot of preparation.

Suggestions

1. Cooperation among teachers is strongly advocated.
2. Make good use of group work by assigning each individual a job and requiring them to report.
3. Give students immediate feedback.
4. Provide clear instruction on how to do the tasks by giving examples.

Appendix

ADVERTISEMENTS

Task 1: Semantic map: Advertisements in Modern Life

Objective: To activate vocabulary

Type: Pre-reading, group work

Preparation: Handout of the semantic map

- Procedure:
1. The teacher distributes the handout.
 2. Students form groups of four to fill in the semantic map.
 3. Several groups to write their results on the board.

Task 2: Blank-filling: The World of Advertising

Objective: To get ideas of advertising, logos, slogans

- Preparation:
1. Pick up an article concerning advertising.
 2. Delete 10 words and put them under the article.
 3. Select five famous slogans around Taiwan under the 10 words.
 4. Put nine famous logos on the bottom of the handout.

- Procedure:
1. Explain 'slogan' and 'logo.'
 2. Ask a couple of students to exemplify 'slogan' and 'logo.'
 3. Ask students to identify the nine logos provided on the bottom of the handout
 4. Ask students to fill in the 10 blanks of the text

Figure 1. Advertisements

Task 3: Scanning Advertisements

Objective: To find out recurrent words for restaurant advertisements

Type: Brainstorming

Material: Restaurant Ads from China Post

- Procedure:
1. Students think of any words concerning restaurants.
 2. Students form group of four.
 3. Each group is responsible for four pieces of Ads.
 4. Each group presents their recurrent words.
 5. The teacher picks up some useful expressions from the Ads and asks some groups in English and ask them to translate them into English.

Follow-up: Students design a logo and copywrite for a restaurant which is going to open.

Task 4: Activating Background Knowledge

Objective: Activate background knowledge

Type: Brainstorming

Material: Three advertisements from Time Magazine

- Procedure:
1. Students choose the kind for each product from multiple-choice options.
 2. Several students explain their reasons for their own responses.
 3. Students learn to get the implication and grasp the meanings of the advertisements.

Task 5: Listening for Specific Information

Objective: Activate vocabulary in the listening task **Figure 2. Movies**

Type: Pre-listening, brainstorming

Material: Advertisements from ICRT

- Procedure:
1. Students listen to advertisements individually and discuss what the content might be about and what kind of products may be promoted.
 2. Students listen to advertisements again.
 3. Students read the transcriptions on the monitor and fill in the blanks on a piece of paper.
 4. Students share their own answers with their classmates.

Figure 1. Advertisements (Cont'd)

MOVIES

Task 1: Semantic Map: Movies

Objective: Activate vocabulary

Type: Pre-reading, group work

Preparation: Design the semantic map

- Procedure:
1. Distribute the handout
 2. Students form groups of 4 to fill in the semantic map
 3. Ask four groups to write their results on the board

Task 2: Info Gap: Let's Go to a Movie

Objective: Teach students to read for specific information

- Preparation:
5. Find the reviews of four different types of movies (from websites or magazines)
 6. Condense the reviews, picking out the parts about different aspects of the movie
 7. Place different symbols (♣♦♥♠) and numbers on the four reviews

- Procedure:
5. Distribute the handout: each student was given a review
 6. Grouping: students form groups of four -- those who hold the handout with the same number are grouped together. Each one is assigned the role as the leader, recorder, time-keeper and reporter respectively.
 7. The four students provide information needed to complete the table summarizing the director, type and good points of the movie
 8. After finishing the table, they discuss which movie they would like to see. They have to negotiate and decide on one.
 9. The reporter from each group presented their results.

Follow up: Groups write a short summary of the movie plot.

Figure 2. Movies

NEWSPAPER ENGLISH

Task 1: Skimming the Newspaper

Objective: To recognize the content of an English newspaper

Type: Warm up

Preparation: The handout with blanks for students to write pages of the newspaper and pages for certain information

- Procedure:
1. Students form groups of four or five
 2. Students skim the newspaper quickly by group and fill in the blanks
 3. Some groups present their 'work'

Task 2: Chunking Different Information

Objective: To learn to identify the main idea of an article

Preparation:

8. A handout with several headlines and leads
9. Under each headline and lead followed by blank spaces for students to write 'subject', 'main verb' 'why', 'when', 'where'

- Procedure:
10. Students form groups of four.
 11. The four students provide information needed to complete the questions
 12. Students present their result by group.

Task 3: Blank-Filling

Objective: To listen to specific information and retrieving the meaning of the listening text

Preparation:

1. A handout provides the skeleton of the text with some blanks.
2. The handout provides some clues to make the listening task easier.

Material: A transcription of local weather report from ICRT

- Procedure:
6. Students go through the handout to get the general idea about what is going to listen.
 7. Students listen to the text twice. Students complete the chart and check their answers with classmates.

Task 4: Getting the Gist of the Text

Objective: To use key words to get the gist of a text in the listening task

Material: Traffic report from ICRT

Preparation:

1. Transcribe a piece of traffic report from ICRT
2. Make up some multiple-choice questions.

Figure 3. Newspaper English

3. Present the material using Powerpoint
- Procedure:
1. Students are given a few of the key words and phrases from a traffic report.
 2. Students are told to guess, from those key words, the gist of the text, given multiple-choice alternatives.
 3. Students give answers and get feedback immediately.

Task 5: Listening for Specific Information

Objective: To listen for specific information

Material: News report from ICRT

- Preparation:
1. Transcribe a piece of news report from ICRT (select shorter and easier ones).
 2. Make up some multiple-choice questions.
 3. Present the material using Powerpoint.

- Procedure:
1. Students listen to the text three times.
 2. The teacher plays the tape again if necessary.
 3. Students respond the questions through Panasonic WE-7900.
 4. Students get the feedback immediately on the monitor.

Figure 3. Newspaper English (Cont'd)

Poem 1 --- THE ROAD NOT TAKEN

Task 1: Jigsaw

Objective: To get Ss participated in reading the poem

Time: 30 min.

Category: Pre-reading

Preparation: Leave every other line of the poem blank

- Procedure:
1. Ss form groups of four.
 2. Ss work together to put the lines which T had taken out from the poem at the right place. Remind them to pay attention to cohesion and coherence.
 3. Ss present their "work".

Figure 4. Poem 1 — The Road Not Taken

Poem 2 --- DO NOT STAND BY MY GRAVE AND WEEP

Task 1: Blank-Filling, Creation and Presentation

Objective: Activate Ss' imagination, let Ss create a poem with a model of this poem

Time: 30 minutes

Category: Pre-reading, warm up

Preparation: Delete the five natural things in the poem

- Procedure:
1. Ss form groups of four
 2. Ss read the poem and fill the five blanks as their imagination leads
 3. Some groups present their "work"

Task 2: Blank-Filling and Comparison

Objective: Give songs of related theme and have comparison 20 min.

Time: 20 Minutes

Type: Pre-listening

Preparation: Leave some words of the song blank.

- Procedure:
1. Discuss the relationship among angels, roses and rain.
 2. Listen to the song "Angels, roses and rain" and fill in the blanks. Compare the song with the poem and discuss.

Figure 5. Poem 2 — Do not Stand by My Grave and Weep

MUSIC

Task 1: Semantic Map

Objective: To activate the idea of music

Time: 15 min. for each stage

Category: Pre-reading and during-reading

Preparation: Create a graphic organizer according to the text

- Procedure:
1. Ask Ss to fill out the GO themselves
 2. Then Ss read the text and fill the bubbles according to the text, using another color of ink.

Figure 6. Music

Task 2: Research and Sentence-making

Objective: Get Ss to know more about music by self-research.

Category: Post-reading

- Procedure:
1. Ss search information about one type of music
 2. Ss digest the materials they found in newspapers, magazines, books, internet or other source of information
 3. Ss make 10 sentences based on the materials to introduce the music they chose to present

Figure 6. Music (Cont'd)

Festivals and Holidays

Task 1: Brainstorming the Pictures-- When do you do these things?

Objective: Activate vocabulary

Type: Pre-reading, group work

- Preparation:
1. Prepare handout which contain the pictures of the activities that people do during different holidays.
 2. As the topic is about Chinese festivals and holidays, the activities are those Chinese people do during different festivals and holidays.

- Procedure:
1. Distribute the handout
 2. Students form groups of 4 to fill in blanks
 3. Ask groups to present their results

Task 2: Holiday Survey

Objective: Teach students to read for specific information

Type: During-reading

- Preparation:
1. Find the materials (books, pamphlets, websites...) containing the introduction of Chinese holidays
 2. Prepare handouts for the homework

- Procedure:
13. Introduce the resources on Chinese holiday (such the homepage of the Information Government.
 14. Distribute the handout and give instruction about how to do the task.
 15. After one week, students turn in their homework and give an oral report.
 16. Distribute handout. Students complete the matrix while listening to the oral report.

Figure 7. Festivals and holidays

Task 3: The History of Thanksgiving	
Objective:	Check comprehension
Type:	During-viewing, brainstorming
Material:	Family Album 6
Preparation:	Make handouts
Procedure:	<ol style="list-style-type: none"> 8. Distribute the handouts 9. Ask students to complete the flow chart by writing down three key words in each box.

Figure 7. Festivals and holidays (Cont'd)

Review

Benefits of using task-based instruction

1. Tasks can be a good tool to force students to concentrate on comprehension instead of word for word processing.
2. With tasks to complete, students have to become active in the learning activity.
3. Students can learn through peer cooperation.
4. Group work can arouse their sense of honor and spur them to devote themselves to the task.
5. The tasks impose responsibility on the students because they are required to give a report (oral or written). Consequently, their participation is increased.
6. Different kinds of tasks appeal to different abilities (such as verbal and art ability) and thus provide the students with a chance to activate and develop their multiple intelligences.
7. Opportunities to do oral reports enhance learners' presentation skills.
8. Tasks and group works almost take care of all the students in a large class. Every student has to participate in fulfilling the tasks.

Difficulties of using task-based instruction

It takes a lot of time to design the tasks and required the teacher to do a lot of preparation.

Suggestions

1. Cooperation among teachers is strongly advocated.
2. Make good use of group work by assigning each individual a job and requiring them to report.
3. Give students immediate feedback.
4. Provide clear instruction on how to do the tasks by giving examples.

Teaching English in a Multimedia Classroom: Nurturing Self-Study Abilities with Modern Technology

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Abstract

This paper concerns the use of a multimedia classroom - a computer-assisted laboratory (CALL) - for the development of interactive/communication skills. It focuses on the importance of motivation and consequent self-study. In order to illustrate the points in my presentation, I use MPEG clips I developed using MPEG 1 and non-linear editing systems. Most of these MPEG are available on the web at <http://comm.shudo-u.ac.jp/campus/auszemi.files/frame.htm>.

A new multimedia classroom was completed at my university just in time for the 1999-2000 school year. The students work at six hexagonally-shaped islands. Each island accommodates six students. Many Shudo University English teachers expected that the students would work at the computers and be given questions via programmed instruction and the teacher's job would simply be to ensure that the students were working. For this reason, there was widespread skepticism as to the usefulness of the CALL room. Contrary to such skepticism, I have found CALL to be highly effective in developing students' communication and self-study skills. I will describe the program and comment on its effectiveness.

Who Are the Students?

My course is one of the Preparatory Study Abroad Classes for the students who will be participating in the American Overseas Seminar (AOS) set up between Arizona State University (ASU) and Hiroshima Shudo University. The backgrounds of the 30 students in this class are varied. They are all majoring in business or computer sciences, and there is a wide range of abilities in English comprehension and speaking. Therefore, in order to maintain the students' motivation, it is extremely important that the lessons in this course be closely tied to what would be expected of them during the AOS program.

The Goals of the Course

My goals for this preparatory course are for the students to

1. improve verbal and non-verbal communication skills,
2. develop skills in gathering new information quickly, and
3. extend competence in day-to-day interactions.

In order to have the students understand these goals, PowerPoint slides and MPEG clips were used. I developed them using the videos that I taped at ASU. They were effective in having students realize the importance of being active both in and out of the classroom. One of the stills is shown below.

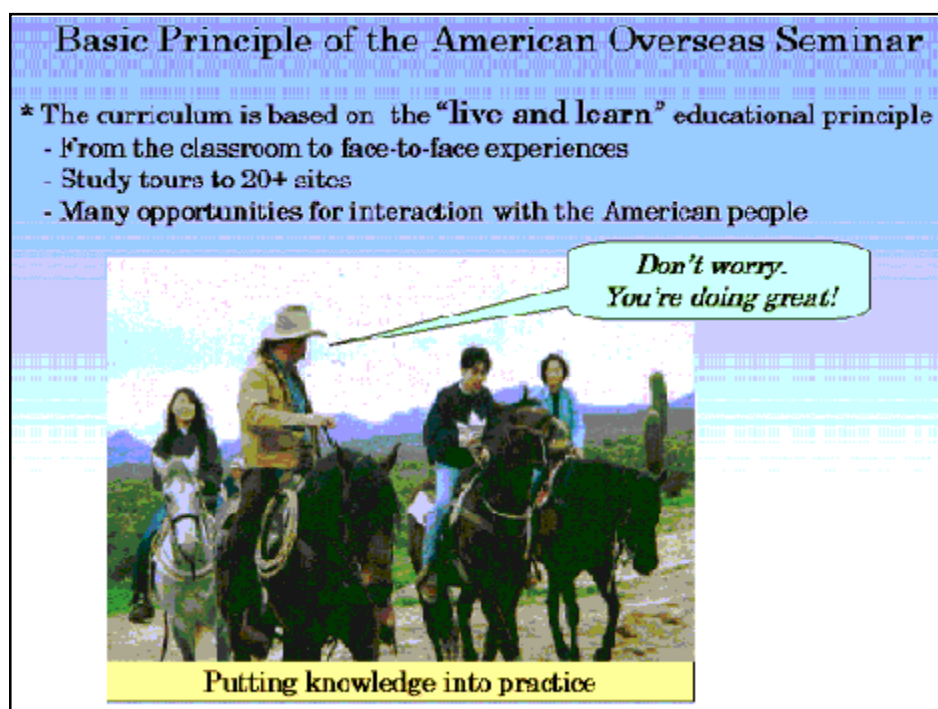


Figure 1. Basic principle of the American overseas seminar

Precepts

In order to accomplish these goals, I emphasize four precepts:

1. Punctuality and Manners -- The students are constantly reminded of the importance of punctuality and courtesy.
2. "The Three-Second Rule" -- A response in any form made within three seconds gets extra points.
3. Self-Confidence for Active Participation -- Help is provided to overcome shyness or self-consciousness about English.
4. Promoting "Self-Education" -- Enjoyable and productive classroom activities promote a commitment to independent study.

Basic Principles and Practices

With these goals and precepts in mind, I will elaborate on the principles behind them, my strategies, and some of the multimedia resources I used.

The Teacher as Guide and "Entertainer"

- Keep students engaged in productive, enjoyable activities.
- Help students realize "English is fun."
- Credit sustained effort for self-expression rather than accuracy.

- Guide the students to be observant of contextual clues.
- Use meaningful texts in context so that students learn to predict, using their knowledge of language and the world.



Figure 2. What's American food?

Most of the class time should be spent on learning activities that guide the students toward expressing what they really want to say. The teacher gives students words of encouragement and creates an atmosphere in which they can express themselves with confidence. I don't believe that students will be able to gain good spoken language ability by only drilling on fragments of language which have no context. Students should be given whole and meaningful texts or dialogues in context so that they can learn to guess at meanings by making use of their current base of English and their knowledge of the world. This will lead them to improve their strategies to survive in English. Therefore, as little time as is necessary should be spent on studying the correct forms of the language. Students should also be given enough practice to sort out what they have learned as well as to expand and connect it to their own lives and experiences. MPEG clips such as the ones above have been developed for this course based on these principles of learning.

Concerns for Students' Anxieties

- Recognize students' reluctance to speak.
- Give them "excuses" to open their mouths first.
- Use bilingual materials as learning aids (e.g. Japanese translations of summaries and English subtitles on MPEG clips).

The teacher should be aware that however great the students' hopes for learning spoken English might be, some students may still experience frustration. Their previous education is likely to have been limited to desk- and book-bound learning. There are even those who have never heard authentic English. There is still another reason why Japanese students hesitate to give voice to their ideas. All Japanese are to some extent conditioned not to speak their minds openly. They are often silenced by the thought "What would they think of me?" Special attention was paid to this cultural aspect and efforts were made to free the students from their uneasiness by adhering to the above principles and practices.

One of the class activities which helped to overcome the students' reluctance to speak was a scheme whereby the students earned dollars that were deposited to their 'Okuda International Exchange Bank' accounts at the beginning

of the semester. They earned these dollars by speaking up, especially for breaking the ice. The dollars were then converted into grade points. As a result, the students who kept silent found themselves feeling embarrassed, so they began to participate actively.

The students' mother tongue should not play an important role in teaching a foreign language. However, as described above, students' English abilities are diverse, and some may feel alienated or stressed from not being able to comprehend. It is important to keep in mind that there are students who need Japanese support to some extent. If students have to leave the class uncertain what is expected of them, their stress will be too great, or they will be too downhearted to do any further work on their own. Therefore, I do not forbid the use of the Japanese language altogether in English classes. The students' mother tongue can be an asset if it is used in such a way that students' interest and joy of studying are sustained. Among the materials appreciated by the students were bilingual summaries both in English and Japanese. Below is an example of the use of bilingual instruction that students find helpful:



Figure 3. How to open the MPEG clips

Respect for Different Cultures

- If students are ready to meet new people without inhibition, they can learn a great deal.
- Be aware of students' feelings of frustration or threats to their status in new environments.
- Teach respect for different cultures.

On the AOS program, the Shudo students have many opportunities to meet people from all over the world and Americans with different ethnic backgrounds. This is an opportunity for the students not only to learn from the host culture, but also to share their personal interests and their knowledge of life in Japan with their ASU conversation partners. However, most Shudo students have never had a chance to meet a person from a different cultural background. Considering the gaps in the social context between people from different cultures, it is essential to teach students how to combat their feelings of frustration or emotional barriers and to respect and attempt to understand different cultures. I used a number of MPEG clips to introduce to the students different ethnic cultures in the United States.

Motivational Features of MPEG Clips

- In every lesson, an attractive wide range of clips on different topics can be made available for the students.
- These clips can be made to serve different levels of English proficiency and confidence.
- Students can experience "authentic English" by enlarging, freezing, or repeating screens as needed.

Some 140 MPEG clips have been developed so far to meet students' needs and English proficiency levels. Some of them are of the same topic but many are of differing content. The students had several choices to make about the topic or level they wanted to work on. For example, I made several MPEG clips for the same topic Pharmacy: 1) a short clip for the students at the intermediate level, 2) the same clip with English subtitles which I typed in when editing the clip, 3) a clip using some news programs in English, 4) the same clip with a Japanese sound track for the students who need help outside the classroom. It was up to the students to choose which clips they wanted to study. Some started out with the easiest ones and then changed to the ones at the intermediate level. Some even challenged themselves with the most difficult ones to begin with.

The impact of the MPEG clips on the students was amazing. Their eyes were glued to the screen. Of all the techniques used to help the students to meet their learning goals, it was the medium itself that made the biggest difference. Students were well motivated to do follow-up activities and individual studies outside their usual class hours. These choices were useful in freeing a student's anxiety about making grammatical errors. They were also useful in having students pay closer attention to the content-oriented studies. The clips are all in natural English, and the students were free to go back to the CALL to review and work more as needed. If they needed some Japanese support, the students were able to click on Japanese sound tracks for some of the clips.

Nurturing Students' "Self Study" and "Self-Education"

- Self-study abilities allow the students to gain knowledge on their own; especially from real life situations.
- Give students many opportunities to read for both purpose and pleasure.

One of the most important goals in this course is to foster, within each student, the commitment to individual study. I believe it is crucial to help students develop good self-study habits. What can be taught during the classroom time is obviously very limited. Therefore, while striving to develop the students' interactive/communication skills in a productive and fun environment, I also try to give them the skills and motivation they need for self-study. Strategies employed to this end were, in short:

1. paying close attention to the students' psychological states;
2. creating a productive learning environment, which could extend beyond the classroom; and
3. making the content of learning materials and teaching methods flexible to match the students' rates of progress and personal interests.

Towards this end a variety of materials were readied for them in both a Class Preparation Room and the CALL. Students use these rooms to listen to and view materials of their own interests. The most popular materials among the materials were American movies with English closed captions and English sound tracks (that is, both voice and captions are in English.) The students were provided with a large selection of movies. The students looked forward to going to the rooms and checking out new movies because many of them were not yet available in Japanese theatres. They were also encouraged by the practice in which these self-study hours were logged and deposited to their "bank accounts."

When deciding which movies to watch, the students read through the file of critical reviews, written in English, of the available movies. The students read these without suffering through the strain and effort some of them put into 'studying' English. That is, they were committing themselves to meaningful reading in order to meet some purpose. Such study encourages the students to pursue their own interests, which can develop a feeling of confidence and justified accomplishment.

Self-Study Hours for Maintaining Motivation

In addition to the study abroad preparatory course under discussion, I taught another non-AOS course in the CALL. During the same semester, I also taught four other required courses in a traditional language laboratory (LL), a room with individualized audio-visual machines but without computer equipment. All the students were encouraged to pursue their studies beyond their class hours. A record was kept of the number of hours students used videos outside class in the Class Preparation Room. In terms of the average total number of recorded self-study hours, the study abroad preparatory class scored the highest, and the other class taught in the CALL scored the second highest.

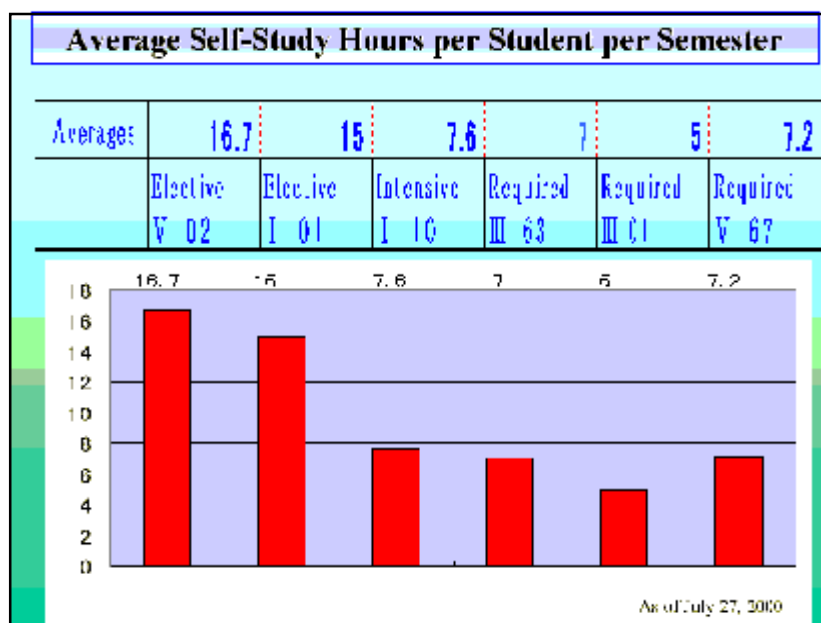


Figure 4. Average self-study hours per student per semester

However, the high recorded level of self study is not evidence that the students of the study abroad program course have become more motivated as a result of teaching using the multimedia facilities. What it may suggest is that through familiarity with multimedia resources in class, the students are comfortable with using these resources by themselves outside class.

A Scene from the Study Abroad Prep Class

We invited students from an American culture class to participate in our class. This activity gave each student a chance to act as a 'teacher.' The students imagined they were meeting their unknown friends at an airport in Arizona and welcoming them to ASU. They went to the door to meet their friend 'at the airport.' This role reversal gave the students a feeling of pride and accomplishment. The students came to the class well prepared to open the computer files efficiently and with a command of the expressions needed, including correct pronunciation.

Conclusion

In my teaching, it is my view that language learning is not merely an acoustic and muscular process nor a process which can be accomplished by the inculcation of rules. It is a 'total human experience' that goes beyond the simple act of memorizing correct forms. As some scholars such as Earl Stevick (1976) advocate, I believe that the deeper the source of a sentence lies within the students' personality, the more lasting value it has for learning a foreign language. From this standpoint I have placed an emphasis on personal and interpersonal significance of the practice activity.

In this presentation, I have outlined goals and principles that I believe are important for effective language learning. In my experience multimedia facilities have shown great potential for meeting these goals. However, we have just begun to understand how best to employ this new technology. A further purpose of this paper then is to spark additional investigation into the use of multimedia facilities for language teaching and learning.

Although I have painted a positive picture of my use of the multimedia classroom, there are certainly some problems or drawbacks. One of them is sudden equipment breakdown. For example, if students arrived late in class, and certain materials such as Flashware had to be fed to them, this sometimes caused the system to freeze up. While we continue to iron out the wrinkles in the system, an all-out effort should be exerted to teach students important basic habits as punctuality. No matter how innovative or creative the teaching material may be, the students' cooperation with regard to punctuality and self-study is essential for successful class management and, therefore, learning, especially in the multimedia classroom.

Another big concern is the lack of funds to buy commercially developed materials, especially CD ROM-based multi-level teaching materials with movie clips. The cost of this material is very high since we need one for each student computer. As I have stated above, one of the outstanding features of the multimedia room is that we can make it possible to meet all students' needs and levels. However, it is to be understood that in order to make it possible, we need an attractive and wide range of materials on different topics and levels. Without these, multimedia equipment is only a set of useless empty boxes. If we cannot afford to buy commercially developed materials, we have to develop them ourselves, and this takes a great amount of time and talent. The students' response and learning makes it worth the effort, however. As discussed at FLEAT IV, considering its great potential, I believe it is important for the ESL community to become more involved with and promote the advancement of the use of the multimedia learning environment.

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Text, Video, and Strategy: A Survey of Junior College Students' LLS Use with a Video-Equipped Textbook

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Abstract

This study was conducted in English classes through one school year at a junior college in Japan. A video-equipped textbook was adopted and students were given various tasks. At the end of each lesson the students described what LLSs they had utilized and evaluated their effectiveness. In addition, pre- and post-course tests on their English proficiency were conducted, and the results were statistically analyzed.

The findings suggest that video-equipped textbooks can give students more sources of information and therefore enable students to utilize various LLSs. Moreover, it may not be wrong to assume that such use of new LLSs had led to development in their listening ability and that video-equipped textbooks have a possibility of giving an opportunity to find a new way of studying English, especially to students who are not good at acquiring information from text-only textbooks.

Introduction

The purpose of this study is to clarify how utilization of audio-visual equipment facilitates students' language learning strategy (LLS)¹ use and affects their performance in English lessons.

In recent years an increasing number of textbooks equipped with their own videotape recordings have been published for college students. The entertainment aspect of such textbooks may more effectively motivate students to learn English than text-only textbooks do in ordinary English lessons. But is that all? This study researches other advantages of using audio-video equipment through a survey of students' LLS use and pre- and post-course English proficiency tests.

Research Design

This study was conducted in English classes through the school year of 1999 with 51 freshmen at a junior college in Kobe, Japan. These students were in a medical technician's course and took only one English class, once a week, in the first semester, during which time this study was carried out, though they had another English class of reading medical topics in addition to the class for this study in the second semester.

For this study a video-equipped textbook was adopted and students were given various tasks which required them to receive textual, audio and visual information. The textbook consisted of 12 units. To complete one unit a listening-task-based lesson and reading-based-lesson were provided. The first lesson was for listening. Students learned new vocabulary, watched a video, answered true-or-false questions, and filled in blanks while listening. In a second lesson, students were given reading comprehension questions about the transcription they completed in the first lesson. The same types of tasks were carried out in each unit.

At the end of each lesson, the students were asked to describe what LLSs they had utilized during the lesson and to evaluate the effectiveness of those LLSs for their performance in the lesson. The LLSs described by the students were collected and listed in handouts to let them share the LLSs, which may have been new and useful for some of them. In the last lesson of the first semester, a list of all the LLSs which had been described, utilized, and evaluated by students through the lessons was given to them, and they were asked to evaluate the LLSs again in terms of whether or not each LLS was in their effective use.

In the second semester, students were asked to keep an English learning diary at the end of each lesson. In the diary they reported what strategies they used or how much they thought their English ability had improved.

In addition to the survey of students' LLS use, English proficiency tests were conducted in the first and the last lessons of the first semester and in the last lesson of the second semester, in April and July 1999 and January 2000, in order to determine how the lessons had affected the students' English learning process. The test consisted of 9 listening questions and 9 reading questions. The same questions were utilized in all three tests.

To pay closer attention to the students' learning process, the students were classified into three groups: high scorers, medium scorers and low scorers. Twelve students who scored 10 points or more were classified as high scorers, 9 students whose scores were 5 points or less were classified as low scorers, and the rest of the students were medium scorers. The results were then statistically analyzed.

Table 1. The Number of Subjects

High Scorers	Medium Scorers	Low Scorers	Total
12	30	9	51

Findings

Findings for the Whole Class

The results of proficiency tests (Tables 2 & 3) showed some statistically significant development of their listening proficiency. The development of the students' reading proficiency was not statistically significant although the means of the scores themselves had risen.

Table 2. English Proficiency Tests (The Whole Class) —April and July—

	April 1999	July 1999		
	Mean	Mean	SD	t-value
Listening	3.04	3.64	1.71	2.54*
Reading	4.75	5.06	1.89	1.18 n.s.
Total	7.78	8.70	2.31	2.86**

N = 51, n.s. = not significant * $p < .05$ ** $p < .01$

Table 3. English Proficiency Tests (The Whole Class) —April and January—

	April 1999	January 2000		
	Mean	Mean	S D	t-value
Listening	3.04	3.82	1.68	3.34**
Reading	4.75	5.25	2.62	1.39 n.s.
Total	7.78	9.08	3.09	2.99**

N = 51, n.s. = not significant * p < .05 ** p < .01

Table 4 contains a total of 30 kinds of LLSs reported by the students, 16 of which were audio-visual LLSs (listening LLSs) and 14 textual LLSs (reading LLSs). The four strategies in the end of the list were strategies introduced by the teacher.

For the final evaluation in the first semester, 6 of the listening LLSs (L1-2, L1-3, L1-4, L2-1, L2-2 and L3-2) were classified as useful by more than 50% of the students and so were 4 of the reading LLSs (R1-1, R2-1, R2-2 and R2-5). These LLSs will be more closely examined later.

Table 4. The List of Language Learning Strategies in Use

Listening Strategy		The number of students who reported "This LLS is efficient"
1	To understand the story while watching the video	
1-1	While watching the video, I listen to the words I know and guess the story.	17
1-2	I first check the keywords or questions given on the handout, then watch the video.	38
1-3	I pay attention to parts spoken in a loud voice.	28
1-4	I try to find any word I know, while watching the video.	39
1-5	When I find a word I know, I try to guess the meaning of the immediate sentence.	15
1-6	I try to understand the video just like native speakers do (I don't use Japanese).	1
2	To get the words to fill in the blanks	
2-1	I pay attention to the first sound of the missing word.	32
2-2	After (While) I check the list of new vocabulary and read the text, I do the task.	39
2-3	When I can't understand the missing word, I guess from the immediate words.	14
2-4	I pay attention to the idioms given in the vocabulary list.	17
2-5	The first time, I just listen; the second time, I fill in the blanks (or vice versa).	11
2-6	I pay attention to liaisons, rhythms and speed of the speech.	4
3.	To concentrate on listening efficiently	
3-1	I pay attention to individual words.	17
3-2	I especially pay attention to the missing words.	44
3-3	I don't read the text and concentrate on listening.	2
3-4	I try to remember the sounds of the new words while practicing the pronunciation in class.	17

Table 4. The List of Language Learning Strategies in Use (Cont'd)

Reading		The number of students who reported “This LLS is efficient”
1	To understand the questions in the handouts.	
1-1	I read the text while looking for the words used in the questions.	46
1-2	When the teacher is reading the text for us, I pay attention to parts read in a loud voice.	17
1-3	While listening to the teacher reading the text for us, I translate it into Japanese.	7
2	To understand the whole text.	
	Sentence - structure oriented strategies	
2-1	I translate the text while telling apart the subjects and verbs of the sentences	40
2-2	While telling apart the subjects and verbs, I translate them following the English word order.	38
2-3	While telling apart the subjects and verbs, I translate them following the Japanese word order.	12
2-4	I pay attention to modifiers, such as to-infinitives or relative pronouns when reading the text.	20
	Words or idiom oriented strategies	
2-5	I look for the words or idioms I know and guess the whole story.	43
2-6	I write down the new idioms in the text beforehand.	25
	Context oriented strategies	
2-7	When I encounter an unfamiliar word, I guess the meaning from the context (with no dictionary).	8
2-8	I try not to translate a sentence literally but get the main idea of the sentence.	25
2-9	I read the text, remembering the scenes in the video.	10
2-10	I use the questions given in the handout to get the whole idea of the story.	24
3	When the text is read, I try to understand the meaning.	3
New strategies introduced (by the teacher) and practiced in class.		
1	Read the text checking out words indicated by pronouns or relative pronouns.	19
2	Think about things related to the topic, then watch the video and read the text.	17
3	Summarize the text after the class to understand the text better.	19
4	Try to get more information about foreign countries to understand the text better.	13

Findings on the high scorers and low scorers

High scorers showed moderate development of their listening proficiency, but their reading proficiency had dropped (Table 5).

As shown in Table 6, low scorers showed substantial development of their listening and reading proficiency, notably reading proficiency. Surprisingly, the mean of their reading test score in January was higher than those of high and medium scorers. To find the key of these low scorers remarkable development, let us look at their use of LLSs and compare them with the high scorers' usage.

Table 5. English Proficiency Tests—April and January— (High Scorers)

	April 1999	January 2000		
	Mean	Mean	SD	t-value
Listening	4.17	5.33	1.59	2.54*
Reading	6.83	5.00	1.85	3.43**
Total	11.0	10.33	2.35	0.98 n.s.

N = 12, n.s. = not significant * p < .05 ** p < .01 *** p < .001

Table 6. English Proficiency Tests—April and January— (Low Scorers)

	April 1999	January 2000		
	Mean	Mean	SD	t-value
Listening	1.56	3.11	2.01	2.33*
Reading	2.67	5.78	2.42	3.86**
Total	4.22	8.89	2.55	5.49***

N = 9, n.s. = not significant * p < .05 ** p < .01 *** p < .001

Table 7 clarifies what strategies high scorers and low scorers used. Their use of LLSs is mostly the same, but there are some differences. A much higher percentage of high scorers used LLSs, such as L2-1, L2-2, L3-4, R2-4, N-1. The first three LLSs, L2-1, L2-2 and L3-4, may be entitled task-oriented LLSs and the rest, R2-4 and N-1, are grammar-oriented, or in other words, they are all “bottom-up processes.”²

On the other hand, low scorers show high use of guessing (inferential, inferencing) LLSs, such as L2-3, R2-8 and R2-10. N-3 is also used by many more low scorers, and their use of these LLSs illustrates that they read and listened to the text with “top-down processes.”

Discussion

On the whole the development of the students’ listening proficiency was clearly shown. It can be said that the use of a video-equipped textbook through a year enabled them to listen more efficiently. On the other hand their reading proficiency showed their unique and complex development. As was mentioned above, the low scorers’ reading proficiency had improved remarkably, and the key of their success could be their efficient use of context-oriented, guessing LLSs.

Some comments written in language learning diaries kept by the students clearly showed the different use of LLSs between high scorers and low scorers. The following comments were written by a low scorer whose scores had risen much through the year (April - L = 1, R = 3; July - L = 4, R = 5; January - L = 7, R = 7).

Oct. 8 (Listening task)

Before the filling-in-the-blank task started, I read the sentences around the blanks and thought about how the story went, then I guessed what words should be in the blanks.

Table 7. The Percentage of LLSs in Use

Listening LLSs	High Scorers	Low Scorers	Reading LLSs	High Scorers	Low Scorers
L1-1	41.7	44.4	R1-1	100.0	100.0
L1-2	75.0	66.7	R1-2	41.7	33.3
L1-3	50.0	44.4	R1-3	8.3	11.1
L1-4	83.3	77.8	R2-1	91.7	77.8
L1-5	50.0	44.4	R2-2	66.7	77.8
L1-6	0.0	0.0	R2-3	33.3	22.2
L2-1	83.3	44.4	R2-4	50.0	22.2
L2-2	91.7	66.7	R2-5	100.0	100.0
L2-3	33.3	66.7	R2-6	58.3	55.6
L2-4	41.7	33.3	R2-7	25.0	0.0
L2-5	25.0	11.1	R2-8	41.7	77.8
L2-6	8.3	0.0	R2-9	25.0	33.3
L3-1	33.3	33.3	R2-10	25.0	44.4
L3-2	91.7	88.9	R3	8.3	11.1
L3-3	8.3	11.1			
L3-4	41.7	22.2			
New LLSs	High Scorers	Low Scorers			
N-1	58.3	33.3			
N-2	25.0	33.3			
N-3	16.7	55.6			
N-4	25.0	33.3			

Oct. 29 (Reading task)

I first read the whole story quickly while remembering the scenes of the video, then I answered the questions.

Dec. 10 (Evaluating my English improvement)

Now I can read and understand English sentences without checking a dictionary. These comments demonstrate a possible factor of her improvement: her efficient use of top-down strategies. She used contextual and visual information intelligently, and this characteristic becomes more evident when compared with comments from a high scorer (April - L = 5, R = 6; July - L = 7, R = 8; January - L = 8, R = 4).

Oct. 8 (Listening task)

I found many parts difficult to get in listening, and it was difficult to understand the story.

Oct. 15 (Reading task)

I recognized how poor my vocabulary is.

Dec. 10 (Evaluating my English development)

I think my listening proficiency has improved, because I am now much more familiar with the pronunciation or speed of native English speakers. But my reading ability has dropped. I think it is because I have much fewer English classes than I used to have in high school. I think I have lost much of my vocabulary and knowledge about English grammar.

As she mentioned in her diary, the decrease in the number of English classes negatively affected her English knowledge. It can also be inferred that she was not good at utilizing the information given in the video and relied exclusively on her decreasing English knowledge.

Conclusions and Implication

These findings suggest that video-equipped textbooks can give students more sources of information than text-only textbooks and therefore enable students to utilize various LLSs which would not be accessible without tapes and videos. Moreover, it may not be wrong to assume that such use of new LLSs had led to the development in their listening ability, and that video-equipped textbooks have a possibility of giving an opportunity to find a new way of studying English especially to students who are not good at getting information from text-only textbooks.

Although this study has the limitation of a small number of subjects, it suggests the utilization of video-equipped textbooks, in other words giving students more sources of information, facilitates students' English learning process.

Notes

1. A definition of Strategy given by Oxford (1989): "Language learning strategies are behaviours or actions which learners use to make language learning more successful, self-directed and enjoyable."
2. In Ellis (1994) the two ways of processing information are succinctly explained:
Færch and Kasper (1986) also recognize the importance of 'top-down processes,' in which learners utilize contextual information and existing knowledge to understand what is said, but they also point out that they may sometimes make use of 'bottom-up processes,' where they pay closer attention to the linguistic forms in the message.

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TOPLINE Telementoring: On-Line Teacher Development

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Abstract

The TOPLINE program is the result of ten years of evolution in a teacher development program in Kumamoto, Japan. It is Kumamoto's first on-line teacher development program. It has as its broad mission the creation of teacher development opportunities for in-service junior and senior high school English teachers, some of whom find attending courses or seminars difficult because of location or time restrictions. A narrower mission of the on-line program is to foster the networking of teacher-trainees (university students) with in-service language teachers. Specific aims of the program are to help participating teachers and trainees define and achieve their own goals in three areas: computer literacy, language development, and teacher development. This paper summarizes the program's background, then details the goals, issues, and protocols that continue to drive it.

Introduction

Ten years after initiating a seminar for junior and senior high school English teachers' in Kumamoto Prefecture, the coordinators of the Recurrent Teachers' Seminar at the Prefectural University of Kumamoto's saw the need for an on-line seminar and have responded to the challenge by initiating Kumamoto's first on-line teacher development program. Dubbed the Teachers' On-line Program for Language Improvement through Networking in English (TOPLINE) by its creators, this program's general mission is to create teacher development opportunities for English teachers who find it difficult to take advantage of other programs because of location or time restrictions.

For some teachers who participate in TOPLINE, unfamiliarity with electronic communication will compound the challenges of self-directed teacher development. Thus part of the coordinators' efforts to facilitate participation must be dedicated to helping technologically challenged teachers get connected to the Internet, in order for on-line language development and professional networking to begin.

Background

Evolution of the LTD Project

Change has been an essential part of meeting the needs of junior and senior high school English teachers in Kumamoto during the ten years that we have been coordinating the Language Teachers' Development Project (LTD Project). In general flexibility has led us toward a more open and responsive seminar when comparing the first seminars conducted in 1991 and the most recent course offerings. The project has evolved through three distinct stages and in two focus areas. The dimensions of evolution include the distribution of the seminar and its content.

The first stage was that of one-off, intensive seminars. In the second stage we initiated semi-distributed, participant-oriented seminars, taking on numerous challenges of bottom-up development (Beaufait, 1997). Now,

with the help of participants, we have initiated a project that promises to address the needs of teachers in Kumamoto regardless of their busy schedules and distance from Kumamoto City.

First Stage: Top-Down

In 1991 the coordinators came to work at Prefectural University of Kumamoto (PUK), and were put in charge of the first English Teachers Summer Seminar. The goals of the first seminar were to teach teachers about listening, speaking, reading, writing, and culture. At this stage the coordinators determined the content of the seminar, except for details of the participants' demonstrations. We devoted five class periods to one skill per class, and then allotted time for each teacher to lead a demonstration class in a skill of interest to him or her. We continued with this one-off style of seminar until we began to find that teachers who attended two years in a row were either not carrying out changes, experimental or otherwise, in their classrooms, or were unable to talk about them. The coordinators concluded that, though it may have been helpful for teachers' language development, a one-off schedule contributed little to real changes in their teaching.

Second stage: Across

The second stage came as a result of negotiations with the PUK administration, which allowed us to add a pre-session before the regularly scheduled seminar and a follow-up session after the end of the seminar. This made it possible for the coordinators to meet with participants once before the seminar started and initiate teachers' inquiry into features of their own classrooms. After the seminar was over, we asked teachers to experiment with a feature of the seminars in their classroom, and then return to a follow-up session to discuss the results of their experimentation.

In order to give participants more control over the content of their seminars, we included in application forms a list of workshops that we were able to lead. The teachers chose those that appeared most interesting to them, or suggested others, and we tallied the results. We then selected the most popular topics to include in the seminar.

Third stage: Bottom-Up

Creating a program distributed throughout the year had always been our aim, and we have achieved this aim in the last two years. Teachers coming together regularly in a group for the purposes of teacher development is a good idea, but unrealistic for teachers who live too far away from the university, or for teachers who have responsibilities that prevent them from attending regular gatherings. The solution was to offer teachers an on-line equivalent of the seminar. In 1999, we piloted the TOPLINE program that would offer teachers a distributed program and make it possible for busy or remote teachers to participate.

In addition to finally offering a distributed seminar, we have also made it possible for teachers to choose their own content. Participating teachers are responsible for determining their own goals, making the program truly adult education (Knowles, 1980, pp. 25-26).

Goals

The aims of the on-line program TOPLINE, in short, are to help language teachers achieve their own goals in three areas from the relative safety & comfort of a personal computer connected to the Internet (www.pu-kumamoto.ac.jp/~pab/topline.preview.html):

1. Computer literacy,
2. Language development,

3. Teacher development.

The in-service teachers in the TOPLINE program can interact with the coordinators and other teachers through the Internet. They can exchange ideas, learn from other professionals, and publicize the results of their learning without having to make great investments of time and money.

TOPLINE Policy

The following policy statement for the TOPLINE teachers' seminar is written for two groups of people, for the participants in the seminar and for the coordinators. It is a written description of our purpose, our philosophical commitments, and the resources that we believe are available for the successful completion of the seminar. The policy section headings are from Knowles (1980, pp. 70-72):

- The role of adult education: Since the participants are adults, the type of program that will best suit their needs is one in which they have direct input in the preparation, the execution, and the evaluation of their own learning.
- Human growth, development, and individual self-fulfillment: We see the two terms growth and development as indicators of quantity and of quality. *Growth* is an increase in size or amount. *Development* is an improvement in what already exists. *Self-fulfillment* is a feeling of reconfirmed self-worth as a result of successfully completing a project or achieving a goal.
- Specific purposes in terms of outcomes:
 - ◆ a greater understanding of how teachers can use available methods of communication to improve their language learning and teaching
 - ◆ improved language skills
 - ◆ improved teaching skills
- Commitment of resources
 - ◆ *Human*- the equivalent of one 90-minute period of class time per week for two instructors for the academic year, April 1, 2000, to March 31, 2001, plus preparation and reflection time
 - ◆ *Financial*- the portions of the coordinators' research budgets that they choose to and are able to use for the program according to university policy, augmented by a nominal amount from the Foreign Language Education Center materials acquisition budget
 - ◆ *Physical*- the material that the coordinators have acquired with their research budget to date; computer facilities, rooms, and classroom facilities assigned to their use by the university
- Target populations: The target populations for the TOPLINE project are in-service junior and senior high school teachers of English as a foreign language who are employed in public and private schools in Kumamoto Prefecture, Japan. The target populations also include pre-service English teachers, teacher-trainees at universities, as legitimate peripheral participants.
- Special conditions governing the employment, training, supervision and compensation of personnel, i.e., the coordinators: The coordinators of TOPLINE, for the purposes of this program alone, are under the direct supervision of the Foreign Language Education Center Director. The coordinators are affiliated to the Faculty of Administrative Studies and are, for all other purposes, under the supervision of the Dean of that faculty (www.pu-kumamoto.ac.jp/~pab/topline.policy.html).

Issues

Mentoring

Mentoring is a slippery concept.... In exploring previously unknown byways that are revealed to them as they travel, [adults] discover goals never before considered and satisfactions not previously experienced. The mentor of adult learners is not so much interested in fixing the road as in helping the protégé to become a competent traveler. (Cross, 1986, p. ix)

One fact that stands out in research on adult education, and specifically language education, is that adults learn best when they are self-motivated and directed, able to interact with their peers, and have someone, often referred to as a mentor, to confer with from time to time.

As professional language teachers, one of the concerns the coordinators share with participants is how to help their respective students get what they need. We think that participants have a better understanding of what that is for their students than we do, so we aren't going to try to tell them what that is. We also feel that they know best what happens in their classroom, so we aren't going to tell them about that either.

What we do is help participants develop and implement plans for their own development, where they can decide what they and their students need, and how best to get it. We also try to keep them in touch with other teachers so that they can tell how they are progressing and help each other with their needs, and so that we can better assist them all (www.pu-kumamoto.ac.jp/~pab/topline.outline.html).

Language

The language for communication in TOPLINE is English, because only by using English can participants hope to grow in the language (<http://www.pu-kumamoto.ac.jp/~pab/topline.outline.html>).

Privacy

Out of respect for the privacy of the individual teachers and teacher-trainees who participate in the TOPLINE On-Line Scheme and Language Teacher Development Forum, the coordinators explicitly request that participants grant permission to publicize personal information from or about them.

Resources

For any project involving technology, certain resources are necessary. Additional resources are icing on the cake. This is the story of the coordinators' struggle to obtain the resources necessary.

Sources of Funding

Tapping the Prefectural University of Kumamoto's FLEC

The Teachers' Recurrent Seminar was initially funded by Prefectural University of Kumamoto's Foreign Language Education Center (FLEC) only. The facilities available were those at the FLEC. The coordinators developed materials with resources available to them with their research budgets.

Teacher-participants were responsible for their own transportation fees, room and board if they came from a distance that would necessitate it, and for course fees. The coordinators have continued to seek ways of reducing the financial burden on teachers. The TOPLINE program was initially conceived as a method for reducing the time and financial burdens that the teachers bore.

Seeking a "C Schedule Grant"

When we first conceived the program, we decided that one method of acquiring the funds necessary would be to apply for a research grant through the Japanese Education Ministry. The application process is outlined in detail in Kirk (1998).

A "C Schedule Grant" would have provided sufficient funds over a period of several years to allow for development of the program: including the acquisition of hardware, software, and Internet connections for the participants; as well as for its implementation, and for reporting on the results of the program.

Reporting on the program at academic conferences would have been part of participating teachers' course work. Funds from a "C Schedule Grant" would have been sufficient to cover domestic and international travel costs for both coordinators and participants.

Exploiting Research Budgets

Upon receiving notice that our proposal for a grant had been rejected, we decided that we would carry on with funds available to us through our research budgets, while the university and the FLEC continue to provide rooms for face-to-face meetings. Our budgets have been sufficient to allow the acquisition of computer hardware and software that the participants could borrow, but will not cover Internet connection services or travel costs for participants.

Collegial Support

The TOPLINE project depends upon various sources and types of collegial support:

Sources

1. Coordinators (each other)
2. Project participants (and their colleagues)
3. Other teachers from the PUK
4. The PUK administration
5. Teacher developers at other universities

Types

1. General encouragement
2. Linguistic (specifically: help translating concepts in English into understandable Japanese)
3. Logistical
4. Technical

The outline above shows only the sources and types of support given. In actuality, there was significant non-support and, on occasion, active hinderance from the PUK administration.

Protocols

TOPLINE is basically a self-supporting endeavor of the coordinators and participants (see: *Policy Statement*, above). It depends upon available resources, mutually agreed development frameworks (*Learning*

Contracts, below), and evolving communication protocols. Table 1 indicates the technological entry threshold of participants.

Table 1. Computer Systems, Servers and Software (April 2000)

Participants	A	B	C	D
Operating Systems	Windows 95	Windows 98 at home, Windows 98 Windows 95 and 98 at school		Windows 98 at home, Windows 95 at the office
Internet Servers and Limitations	Biglobe, maybe	Nifty server, few limitations	DEODEO internet service	nifty.ne.jp at home, no limitations; NTT OCN at the office, a strong firewall, no Realplayer sound files or the like.
Word Processing Software	Word 98 and Ichitaro, Ver. 9	Microsoft Word and 2000	Microsoft Word	Justsystem Ichitaro, Ichitaro, Ver. 10 (1999)
E-mail Software	MS Outlook Express 5	Microsoft Outlook	Outlook Express Ver. 5	Microsoft Outlook Vers 5.

Note: The coordinators use Macintosh OS 9 and have Ethernet access at the Prefectural University of Kumamoto. Their software preferences are: Corel Word Perfect (3.5) for word-processing, Eudora Pro (4.2) for e-mail, Netscape Communicator (4.7) and BBEdit Lite (4.1) for browsing and web page-making.

Learning Contracts

The basic format for the learning contracts and a complete description of the concept can be found in Knowles (1980). Below are a two sample contracts which the coordinators have obtained permission to publish.

Table 2. Teacher B, Senior High School 1

Area of Concentration	Computer Literacy	Language Development	Teacher Development
Objectives	In order to learn how to make use of the Internet site in my classes, I will document my project on the Internet reference.	In order to build my English vocabulary, I will read a newspaper and magazines written in English, and try to use use English in my class as much as possible.	In order to improve the effectiveness of my classes, I will try to make my English class more student-centered and find ways to improve students' ability to speak and listening to English.
Resources and Strategies	Software installed on the computer, internet sites, books on internet sites	English magazines (Time), books, newspapers, internet sites, ALT	Software for improving pronunciation, books about effective teaching methods

Table 2. Teacher B, Senior High School 1 (Cont'd)

Participants	A	B	C	D
Date for Completion	October 1, 2000	October 1, 2000	October 1, 2000	October 1, 2000
Evidence of Accomplishment	If I carry out my objectives, I will use internet as a teaching materials during my classes.	Take TOEIC or TOEFL and make sure how much my vocabulary will be improved.	Ask other English teachers to come to my class and to tell me what they think about my class. Try to know how much the students are satisfied with the class by collecting data through questionnaires and interviews	

Table 3. Teacher D, Senior High School 2

Area of Concentration	Computer Literacy	Language Development	Teacher Development
Objectives	Making a web page, sending e-mails, finding helpful sites for students, participating in some forum	Enough to understand this seminar	To create a file of (1) activities (2) hints to activities, that will be good for classroom situations and which involve the use of computers.
Resources and Strategies	Access to the Internet School Web site. E-mail acct. at school, E-mail acct. at home, Use of html	Attend the seminar, ask questions, keep notes, send/read e-mails, read books/web pages	Join CALL (computer assisted language learning) [Special Interest Group of JALT]; contact www.hll.kutc.kansai-u.ac.jp:8000/fleat4.htm . (nationwide conference); search in NACSIS-CAT (an on-line univ. library network); borrow books/periodicals (through Paul or from the univ. library)
Date for Completion	June 2000/February 2001	June 2000/February 2001	June 2000/February 2001
Evidence of Accomplishment	Expanded links of Kumamoto High School Website (for students/for teachers [June 2000/February 2001]; report or demonstration to teachers at Kumamoto High School [February 2001]	A glossary of useful words for teachers, a list of resources for teachers, a list of useful sites for students, with reviews in easy English for students	Filed documents to help other teachers, expanded links of Kumamoto High School website (for students/for teachers); report or demonstration of activities to teachers at Kumamoto High School

E-mail Exchanged (April - Sept. 5)

E-mail is the primary mode of communication in TOPLINE. In Table 4 (below) are the numbers of messages exchanged between coordinators and participants from the application deadline in April till noon on Sept. 5, 2000.

Table 4. Correspondence

Participants	Messages (w/attachments)*	Notes
A	6(1)	Withdrew from the project**
B	15(2)	Senior high school teacher
C	36(1)	Junior high school teacher
D	39(4)	Senior high school teacher
E	15(1)	Teacher-trainee, 3rd year university student
Group	9(2)	(Addressed collectively)

* Attachments included HTML files, JPEG graphics, and word processing documents.

** This teacher's stated reasons for withdrawal were that she expected to be like a college student (again), instructed in a traditional fashion. Although interested in teacher (self-) development, she said she was primarily interested in developing language proficiency. She has not replied to a follow-up inquiry regarding her expectations.

Over the same period of time, the coordinators exchanged with each other at least 48 messages (16 attachments) concerning the LTD Project. Furthermore, since all active participants have granted permission for their e-mail addresses to be shared openly within the current cohort (B-E, below), they also have been able to communicate directly via e-mail with each other.

Assessment and Evaluation

Project assessment is but one realm for evaluation. Centered on participating teachers, this involves formative self- assessment, culminating a project cycle of planning, implementation, and evaluation (PIE).

Table 5. PIE Cycle

Planning	Implementation	Evaluation
At the beginning of a project cycle, participants set objective goals and propose evidence of accomplishment in contracts with themselves	In the middle, participants report and obtain feedback on what and how they are via e-mail submissions or at Forums ("Off-kai").	At the end, participants assess what they have accomplished in light of the goals that they had set at the beginning of the project cycle.

A major focus of project assessment is individual accomplishments. Coming at the end of the current semester (April - September, 2000), this periodic assessment also calls for joint reflection on the process of electronic communication amongst teachers and coordinators.

Another realm for evaluation embraces much more than a six-month PIE cycle. This realm resembles what Hargreaves has described as a 'moving mosaic:'

... a complex network of teachers who engage in dialogue around the principles of language learning, the sharing of good practices, exhibitions of classroom work, and inquiry into case-study portrayals of language learning. ... a policy process that is not a line or cycle, but a postmodern 'moving mosaic' of teacher discussion and development groups, shifting and overlapping, moving people, issues, ideas, and activities vigorously around the system. (Hargreaves, in Syverson, 2000)

The TOPLINE telementoring scheme has added an electronic dimension to our language teacher development project in Kumamoto. The extent to which it has enabled practicing teachers - energetic volunteers - to achieve their own goals, in collaboration not only with the university-based coordinators but also with one another, remains to be seen.

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‘TOWUMI’ and Its Effectiveness Diagnosis Based on a Whole Language Learning Approach and Learner Differences

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Abstract

This paper summarizes the effectiveness of reading, writing, listening, and conversation skills via a homepage, i.e. TOWUMI, from the results of two fall 1999 surveys. The first one asked about the anticipated effect of TOWUMI before students accessed the computer and used TOWUMI, and the second one diagnosed the actual effectiveness of TOWUMI after respondents had used it, and this result was compared with the anticipated effect (Lee & Cousins 2000).

The paper also considers a qualitative and prismatic evaluation based on different learning styles and strategies of learners (Chapelle, 1989a, 1994a; Levi, 1997). As Yildiz and Atkins (1993) note a ‘fundamental shift’ in the purpose of evaluation studies, some characteristics of the new media in relation to key factors associated with learning, the learner, and the learning context are highlighted at this time. Along with this trend, this paper focuses on inspecting the relation between the effectiveness of TOWUMI and some specific types of learning styles and strategies.

TOWUMI Evaluation based on a Whole Language Learning Approach

The term TOWUMI, which will be mentioned throughout this paper, refers to the homepage which was designed to compliment student learning based on a whole language learning approach incorporating reading, writing, listening, conversation and grammar. TOWUMI serves (a) as an organizer for better class efficiency, (b) as a motivator for students’ independent study, (c) as the center for student writing and correspondence, (d) as a place for student entertainment and fun, and (e) as an avenue for communication. Data used in this paper are from the second semester of the one-year project. 55 students (87% of 63 students) from three different majors, computer science, business administration, and tourism management, were enrolled in general sophomore English conversation classes at PaiChai University.

Since the analysis of the effectiveness of TOWUMI for the improvement of the 4 skills of reading, writing, speaking, and listening was already carried out and written elsewhere (Lee & Cousins, 2000), this paper will summarize TOWUMI’S effectiveness based on these 4 skills.

From the survey questions asking about the effectiveness of the reading material used on the Internet (7 questions, before and after the use of TOWUMI), only 11.2% of the students responded negatively. Many students thought Internet reading material helped them learn more about American and other western cultures in an enjoyable way. Students were required to do reading homework and prepare for an in class conversation exercise based on their reading. This gave students the opportunity to read authentic materials while at the same time expanding their vocabulary, linguistic knowledge and interest in the subject.

For the writing evaluation, email, though not a direct part of TOWUMI, served both as an avenue for better student/teacher communication and as a medium for the submission of homework assignments. Even though students had uncomfortable feelings about using TOWUMI at the beginning, since it required them to write in English, 72% of the students stated chatting in English improved either their writing skills or the relationship with

the teacher. Improving ones' writing skills takes a great deal of continuous practice and time. Based on information gathered from the survey though, most of the students felt TOWUMI did help them improve their writing skills.

Questions asking about students' attitude towards speaking through a computer were also asked. Using a chat room on TOWUMI for speaking practice was only semi-successful. While 60% of the students expected chatting would be helpful for English speaking practice before they used TOWUMI, only 28% of the students agreed chatting helped them improve their speaking skills after they had actually tried TOWUMI. This semi-success can be attributed to the limited time period when both the students and the instructor were conveniently available and to the students' busy school schedule.

For listening practice, Randall's Cyber Listening was linked to TOWUMI and assigned as independent study outside of class. The results of the listening section were not very positive. Only 11% responded that Randall's Cyber Listening helped them. This negative finding can be the result of leaving the students to practice Internet listening on their own instead of assigning them listening exercises related to the curriculum of the class. From the results of the survey, though, very few students thought Internet listening was boring. This implies that students want Internet listening tasks that aren't difficult to operate and are related to the themes of the text.

Evaluation based on Learning Styles and Strategies

In reviewing TOWUMI's effectiveness, the diagnosis in relation to the four language skills of listening, speaking, reading and writing has already been reviewed elsewhere (Lee & Cousins, 2000) and summarized in the previous section. This section is devoted to reviewing the correlation between the learning styles / strategies of students and the effectiveness of the TOWUMI system. Many researchers (Chapelle & Jamieson, 1986:42) examined the manner in which subject characteristics affected acceptance of, and success with, CALL. They claimed that effectiveness must be analyzed in terms of the effects of defined types of lessons on students with particular cognitive/affective characteristics and needs. As mentioned in the introduction, evaluation should be made in association with the learning processes of learners. To do this, respondents in the study were given a range of questions focusing on their field-independence/dependence, left-/right-brain dominance, reserved/ outgoing personality, tolerance/intolerance for ambiguity, and visual/auditory orientation at the end of the second survey. Most of the results correlated with the theoretical tendency that Brown (1994) claims in his text while some of the results do not; some of the results that did not correlate with Brown's theory might be attributed to the small effect size.

Working Hypotheses

In order to draw some implications for EFL teachers, the following hypotheses were established:

1. Does being from a particular major suggest some guidelines that might help teachers design a more effective class curriculum?
2. Is there any correlation between the different learning styles & strategies of students and the effectiveness of TOWUMI?
3. Which levels of students seem to profit most from using the TOWUMI system to learn English?

Data Analysis

In order to keep the survey and the paper simple, nine questions based on a 5-point Likert scale, pertaining to styles and strategies were asked. Therefore, an overall account of the cognitive learning variations students used during the course cannot be summed up from these few questions. But from these questions, both the instructor and the reader can get an idea of how students in this study approached this particular type of teaching method; using a homepage in an EFL class to teach the four basic language skills of reading, writing, listening and speaking.

The nine questions and their corresponding styles and strategies are outlined in table 1 below.

Table 1. Survey Questions and the Corresponding Styles and Strategies

Information on Learner Differences	Styles and Strategies	
	Agree	Disagree
1. Are you better than other people at finding hidden objects in a picture?	Field Independence	Field Dependence
2. Are you able to accept obscure or contradictory facts about existing theories without any resistance?	High Ambiguity Tolerance	Low Ambiguity Tolerance
3. Do you prefer seeing to hearing in order to understand something?	Visual Style	Audio Style
4. Do you have a strong control over your emotions?	Strong Control over Feelings	Weak Control over Feelings
5. Do you think you are more subjective and intuitive than objective and analytical?	Subjective & Intuitive	Objective & Analytical
6. Do you solve your curiosities by asking questions in class?	Questions for Clarification	Reserved
7. Do you prefer learning by yourself rather than learning in a group?	Individualistic	Cooperation
8. Do you try to avoid using unfamiliar words or phrases in a conversation class?	Avoidance	Try
9. Do you monitor the language you are learning a lot?	More Self-Monitoring	Less Self-Monitoring

Students' Majors and Class Design: To discover the findings for the hypotheses the raw data was manipulated in several different ways. For the first hypothesis, the styles and strategies of students in their particular labeled class, that is computer science, business administration and tourism management, are analyzed respectively and a summary is shown in Table 2.

A strong majority of computer science students answered that they were field independent, visually oriented, controlled their feelings well, and were more subjective and intuitive than objective and analytical.

Based on the teachers' classroom observations the data looked to be quite valid. There were about 5 students who were quite outspoken and routinely asked questions in class. Students also showed a keen interest in the class and thus monitored their writing more than others. About 2/3 of the students were quite close thus they enjoyed doing exercises which involved teamwork.

The business administration data showed a strong division in the learning styles and strategies of students in this class. This was also apparent in class while teaching. Students who sat on the left side of the class were reserved while those sitting in the middle were sometimes talkative and students on the right were very out-going and sometimes never stopped talking in class. Even though there was an apparent dissimilarity between the students, the data show a majority of students were visually oriented, and subjective and intuitive rather than objective and analytical.

The tourism management students showed a variance in their learning styles and strategies. The three categories that showed a strong following were ambiguity tolerance, visually oriented, and practiced an avoidance strategy.

These tourism students were very bright and most were really eager to learn English. The instructor feels that the “questions for clarification” and the “self-monitoring” data collected from this class are too low. Many students were highly motivated and tried their best in every assignment. Also many questions were asked either verbally in class or through email correspondence. The instructor would agree with the low ambiguity tolerance of the students for many thought the class exams were very challenging. Difficult exams were given in this class because the student’s English proficiency level was high.

Table 2. Combined Results of the Second Semester Students

Styles and Strategies	Yes	Both	No
Field Independence	24	23	8
Ambiguity Tolerance	15	12	28
Visual/ Auditory Styles	43	8	4
Control Feelings	25	17	13
Intuitive/Analytical	27	14	14
Questions for Clarification	16	18	21
Cooperation	21	15	19
Avoidance	28	17	10
Self-Monitoring	14	27	14

When the three classes are combined, unlike the expectation set up in Hypothesis 1, the results show four categories with strong results regardless of their majors. Students tended to be visually oriented, more subjective and intuitive than objective and analytical, practiced avoidance and were not ambiguity tolerant. These results reveal that students have dual tendencies—left-brain dominant and right-brain dominant characteristics. EFL/ESL teachers can get some implications from these findings. A visual, intuitive and subjective style would suggest that the majority of students showed right-brain dominant tendencies, which implies they can be more free with feelings, good at interpreting body language and are good at dealing better with whole images and generalizations, and they can be synthesizing, not analytical, readers, (Stevick, 1982). The majority of students were not ambiguity tolerant and avoided using unfamiliar words or phrases in class. This would suggest that students are also left-brain dominant learners and they are better at producing separate words, gathering the specifics of language, carrying out sequences of operations, and dealing with abstraction, and classification. Krashen, Selinger, and Hartnett (1974) found support for the hypothesis that stated left-brain dominant second language learners prefer a deductive style of teaching, while right-brain dominant learners are more successful in an inductive classroom environment. Since the majority of students in this research have dual characteristics, the instructor could design the class in both inductive and deductive ways.

The Correlation between Students’ Characteristics and the Effectiveness of CALL: The scope of the styles and strategies of students were expanded to cross-check the correlation between the students’ characteristics and CALL instruction. The expanded styles and strategies of students were cross-checked with questions seven through seventeen below which pertain to computer use. From this cross reference the four skills of reading, writing, listening and speaking were evaluated as well as the general questions (#16 and #17) concerning increased interest in the class and reduced anxiety.

*Computer use questions:

7. The Randall listening site enhanced my listening skills.
8. Practicing listening through the Internet has more downfalls than benefits in terms of its effectiveness.
9. Internet reading material provided me with very authentic reading.
10. Internet reading material helped me express myself better in the conversation class.
11. Authentic materials on the Internet helped me to better understand American culture.
12. Chatting on Towumi helped me with my writing.
13. Using email improved my relationship with the teacher.
14. Using email gave me unpleasant feelings about Towumi since it requires me to write in English.
15. Chatting helped me to improve my speaking.
16. Using Towumi increased my interest in the English class.
17. Using Towumi reduced my anxiety about computers.

Results

Listening

Most of the student responses towards the Randall Listening site were negative. From research data only 11% agreed that the Randall Listening site enhanced their listening skills, with 36% disagreeing and 53% remaining neutral. Only the audio oriented students, 3 out of 4 students, and the objective and analytical students were in any way positive towards this listening site.

The more outspoken students mentioned that Internet listening had more downfalls than benefits in terms of its effectiveness. Low tolerant students (46%) and students with weak control over their emotions (54%) also spoke out against Internet listening. It's also interesting to note that students who didn't avoid unfamiliar things (60%) and those who monitored their learning (60%) also spoke out against its effectiveness. One would expect that these two types of students would most likely to be adventurous and at least try to improve their listening skills through the Internet. According to the analysis, the brighter students tended to monitor their language learning more than the lower end students. These findings could be the result of leaving the students to practice Internet listening on their own instead of assigning them listening exercises. The outcome of the data would most likely be different if listening assignments were handed out during the semester.

Reading

The data's reading results were quite positive, which would suggest that Internet reading is effective for ESL reading (Lee, 2000). Almost all types of students agreed that the reading material helped them to learn more about American culture. The Internet can be quite a good tool for incorporating authentic reading materials into the class curriculum.

Internet reading was also beneficial for different types of students. First of all, both reserved and talkative students benefited. Having students read the material outside of class and then talk about it in groups in class helped both kinds of students. Second, both high and low tolerant students also enjoyed Internet reading. Most interesting was the response of visual and audio oriented students. Only one out of four audio oriented students agreed with question 7 dealing with the Internet providing them with authentic reading practice.

Chatting

Students were quite ambivalent about the effectiveness of Internet chatting for the improvement of their writing (question #12) and speaking (question #15). In fact all types of students were neutral towards the effectiveness of improved writing through chatting. In regards to question #15, students were quite ambivalent again, but in three categories (reserved students, avoidance strategy, and less monitoring) students had a negative opinion. The ambivalence towards this question could be affected by the low number of students who actually chatted often with the instructor.

Writing

There were a few survey questions that asked about writing. Two which pertained to email and writing that will be discussed here, and a third question asking whether chatting helped students improve their writing has already been discussed elsewhere (Lee, 2000). Students responded overwhelmingly positive to whether email had improved their relationship with the teacher. There was an overall 87% approval rating, therefore it would be expected that all the styles and strategy categories would have a high positive response rating. Still there were three questions which showed a relatively lower than average rating towards this question. These are avoidance strategy, 77%, field independent, 79%, and audio oriented students at 75%. Field Independent students are usually audio oriented, but one would think that these types of students would be better at talking and writing. Emotions could possibly be factored into this question because students who control their feelings, field independent types, didn't fair as well as those who were freer with their feelings.

It can be observed from this data that email is a very effective way of having students approach writing through the use of the Internet. The instructor, having lived all over North America, finds that Korean students tend to be more sociable than Westerners. This avenue allows students to feel more at ease with their instructor while at the same time writing. In regards to this question, the data collected from the two semesters are quite different. The instructor believes that the second semester data was a lot more positive because the instructor's response during the second semester was a lot quicker overall. Students tend to enjoy getting positive feedback and email from their instructor.

General Question

Questions #16 and #17 were general questions relating to increased interest in the English class due to Towumi's use and reduced anxiety towards the computer after using Towumi. Many different types of students responded quite positively to these questions. 51% and 44% respectively answered positively towards these two questions. Almost all the data for questions #16 and #17 show above average percentage rates. A couple of results which caught the instructor's eye are both reserved and talkative student's interest in the class increased after using the Towumi system and students who were more willing to try things reduced their anxiety about using computers.

The Correlation between the Levels of Students and the Effectiveness of CALL: The styles and strategies of the top and bottom ten students, evaluated on the basis of their quizzes, midterm and final exams will be discussed. This section attempts to discover whether there are any generalized trends which can be extracted from the data collected from these students..

The following differences were extracted from the analysis of the top ten and bottom ten students, respectively.

1. Seventy percent of the top ten students were not ambiguity tolerant whereas 60% of the bottom ten students remained neutral.

2. None of the top ten students were auditorily oriented. There were 4 auditorily oriented students in this research, 2 of them were in the bottom 10.
 3. Sixty percent of the top 10 students asked questions for clarification whereas 50% of the bottom 10 students didn't.
 4. Sixty percent of the top and 10% of the bottom 10 students preferred teamwork while 40% of the bottom 10 students preferred to work by themselves.
 5. All of the bottom 10 students practiced some form of avoidance.
 6. More of the top ten students practiced a form of self-monitoring.
-
1. Ninety percent of the top 10 students were undecided as to whether Internet reading helped them express themselves better in a conversational class (Question #10). 40% of the bottom 10 students thought it did help.
 2. Sixty percent of the top and 20% of the bottom students thought that Internet materials helped them understand American culture more.
 3. Forty percent of the top ten students thought that chatting improved their speaking and writing abilities but 40% of the bottom students thought that chatting didn't improve their speaking or writing skills.
 4. One hundred percent of the top and 70% of the bottom students thought that email improved their relations with the teacher.
 5. Sixty percent of the top 10 students said that Towumi reduced their anxiety about using computers.

Summarizing the differences between top ten and bottom ten students the following is a description of these two types of students.

A top ten student was visually oriented, preferred established clear exercises, asked a lot of questions, preferred teamwork, and practiced some form of self-monitoring.

She or he also enjoyed learning more about Western culture and enjoyed chatting and using email. By learning through the use of Towumi, a top student had a closer relationship with the teacher and reduced their anxiety about using computers.

In contrast, a bottom 10% of the students were somewhat ambiguity tolerant, didn't ask many questions, worked by themselves, practiced some form of avoidance, and didn't monitor their work much.

She or he didn't learn much about Western culture through the Internet and that chatting didn't improve their speaking or writing capabilities much. Many though did believe that email improved their relationship with the teacher.

Implications of the Learning Styles and Strategies

From the implication of the diagnosis, some suggestions can be made for foreign language teaching.

According to the evaluation, most students answered quite positively that reading is the most useful language skill that can be taught on TOWUMI. Yet teachers have to be aware of the students' reading level before giving an Internet reading assignment. Most of the English web pages the instructor has visited, excluding EFL

related web sites, have ranged from intermediate to advanced comprehension levels. Without pre-awareness of students' levels, students might think the English is too difficult. Some web pages also have been found to be rather confusing. On the Internet, there are multiple web pages that can be found concerning a particular topic. The instructor's task is to find a web site that is appropriate to the particular class or classes instead of just picking the first one that is found.

To improve student participation in writing, a simple English phrase sheet should be handed out at the beginning of the semester which students can use while they are chatting in English. This will boost the students' confidence level and keep them active in the process of chatting.

The discouraging listening results implies that exercises for independent study should be related to in class activity and as an alternative to linked Internet listening sites, an easy TOWUMI listening system that will attract students and keep them engaged in the listening task needs to be designed.

If knowledge about different learning styles and strategies of students can be obtained at the beginning of the semester, the instructor could then offer particular students advice on beneficial in-class and out-of-class activities. A more appropriate curriculum and classroom management style could also be adapted and certain compensatory techniques could be practiced to help students overcome certain weaknesses.

The information obtained in this study doesn't intend to classify Korean university students into who are successful language learners and who are not. Rather it was done to give insightful information to instructors who are thinking of teaching via a homepage. Future studies by the researchers will be done to further expand and back up some of the findings in this paper.

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The Use of News and Internet for English Classes at a Japanese University

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Abstract

The purpose of this study is to improve university students' listening abilities and reading abilities by using computers. In this article, the author will focus on the use of news via video on demand for listening and the internet for reading. These two media can be combined together and presented to the students in a CAI room in one class period. In this way, the students are able to have self-access to the material and that allows them to study at their own pace. It also gives each student freedom in selection of the material. The author hopes this study will lead to curriculum revision for English classes at Japanese Universities in the future.

Discussion

As far as English education in Japan goes, we often hear many teachers say that our students cannot speak although they have studied English for more than 6 years at the secondary school. Speaking is certainly one aspect to show the learner's English proficiency. But this author believes the learner's speaking ability is closely related with his listening ability. Based on this belief, she suggests that listening practice should be included in the curriculum of teaching English for general purposes at a Japanese University.

As Helen Keller (1954) said, "Listening is centripetal; it pulls you into the world." Looking is centrifugal; it separates you from the world." Listening is the start for a language learner to be involved in the speech community. Listening takes place in our mind and its process is invisible. As Donald MacKay et al. (1987, p.2) pointed out, "Language perception and production are intimately related and difficult to separate operationally. Every speaker is simultaneously a listener, and every listener is at least potentially a speaker." This means if we want to encourage the students to speak, then we cannot ignore the aspect of listening as well. These two actions of speaking and listening take place in turn and they are reciprocal processes of language communication of human beings.

As Karl Lashley (1951, p.186) says, "The process of comprehension and production of speech have too much in common to depend on wholly different mechanisms." The importance of giving listening practice to the students can be emphasized from the viewpoint of the Input hypothesis, too. Krashen (1985) says that there is a correlation between the frequency with which linguistic items occur in the input and the order of acquisition of the same features. Long (1981a) also says that it is necessary for learners to have comprehensible input for acquisition for a language. Although this input hypothesis is a controversial issue, we can at least say that learners need to be given enough input in order to acquire a new language.

The theoretical understanding above has lead me the use of English news programs for enhancing the students' listening abilities.

The advantages of using English news programs are:

1. The students are able to get used to the natural speed of speech by native speakers.

2. It gives the students a chance to become familiar with the content of their fields of specialty such as nursing and occupational therapy.
3. The students are able to increase their vocabulary in a natural context by watching the news.
4. It is good practice for the students to grasp the main idea and summarize the story.
5. Pictures in the news help them understand the story better and play a role as a schema, especially for students at the intermediate level.

However, we cannot ignore the difficulties in using English news for listening practice as well. First, the speed of speech on the news is too fast for most of the students, Therefore they feel it is difficult to understand. Secondly, they sometimes hear new words. However, there are some ways to solve these problems when we implement the method. It becomes necessary to edit the news so that the students can understand without too much difficulty. For example:

1. Pointing out the new vocabulary to the students
2. Showing part of the English script on the monitor
3. The teacher reading part of the English script
4. Having the students repeat after her
5. Giving comprehension questions
6. The students making access to one of these computers with video on demand.

(At the presentation, this author showed the listening program she developed with the use of CNN News.)

In the next section, this author explained how the Internet can be used to give the students background knowledge to understand the listening material better. The following summarizes the reasons why it is suggested to use the Internet for English classes:

1. The information is updated.
2. The way it is presented is very attractive.
3. The students have several choices for reading depending on their interests and differing levels of language proficiency.
4. The students can read at their own pace.
5. It is easy to find reading material that is related to the content of the listening section.
6. The reading material on the Internet gives background knowledge for listening.

For the listening program “Children Hope for the Future”, this author chose the reading material about Convention on the Rights of the Child from the home page of UNICEF. The students can read the pages where all the rights for children defined by UNICEF are listed such as “The Right to an Identity” and “The Right to an Education. In class the students read each article in English and then they were supposed to decide the most important right for children and translate the English articles into Japanese. They also wrote the reason why they thought those articles are the most important for children. Therefore, this task is not only for reading but also for writing, too. Once the students have written their opinions on the right, it is possible to send their voices to UNICEF through Internet and exchange their opinions with the young people all over the world. After this task, the students can read the Japanese version of the Convention on the Rights of the Child on the Internet as well. This helps the students understand the contents easily and better and they can compare the translation of their own and the “correct” one. It is also possible for the students to read about Bangladesh, whose poverty and difficulty to get

enough education was introduced in the video material, and learn more about the situation of its economy and education.

As an output or product, the students are supposed to choose the topic which they are interested in and create their own news program and report it to the class as a group work. This gives them an opportunity to express their ideas and opinions using the vocabulary and usages they have learned by listening to the news programs.

At the end, this author discusses some of the benefits and problems of using computers in teaching English at a University. The use of computers certainly increases the number of possible teaching style and expands our imagination when we make teaching plans. The students can freely get access to the abundant information on the Internet and watch and listen to the various listening programs through the video on demand system. These points are certainly beneficial for any serious language learner. The use of computers also makes it possible for learners to study at their own pace and to choose the material most suitable for them. However, computers are only tools the both teachers and students use. They cannot assume all the responsibilities for teaching. The teachers have to be careful about making enough chances for interaction among students and between the teacher and the students as well. Also computers can cause many unexpected problems that might interrupt our teaching at the same time they give us wonderful teaching opportunities. Too much reliance on computers does the students harm. However, this author believes the benefits outweigh the potential problems that might occur in class. It is an exciting thing to think about all the possibilities that the use of computers will bring to the teachers. However, only because new technology has a place in our teaching, that does not mean we exclude all the traditional ways of teaching such as reading books, giving a lecture and discussing various issues in a group. We, humans, are the ones that decide how to use those machines and computers cannot have a control over teachers or students either.

Computer Assisted Instruction Room is the place where humans and machines coexist. Certainly they are worth exploring to improve our teaching methods.

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Using DVD in the Classroom

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Abstract

Video is an important tool of the language classroom, but current video technologies have limited the effectiveness of video integration into classroom procedures due to various problems:

VHS video: Provides a standard format and some portability for classroom, lab and home with reasonable fidelity, but lacks precise random access. Time in class is often spent fast-forwarding to selected scenes.

Laserdisc: Brought high fidelity and random access to the classroom and language lab but never penetrated the home to a useful percentage. It could hardly be considered portable.

The emerging Digital Video Disc or DVD format promises to combine high fidelity, a standard format and portability, so that the same video material can be used in class, in the lab, in the home—and even on the go—with portable electronic devices.

DVD Capabilities

The DVD format was developed primarily to bring full-length, feature movies to the consumer market in a medium the size of the audio CD. But it is more than just the miniaturization of the laserdisc. Whereas a laserdisc contains digital information representing the entire frame of video, DVD uses sophisticated compression schemes to compact the amount of data required to reproduce the picture and sound. Even with this compression, the image and sound quality can be stunning in their fidelity. The compression rates can be adjusted to bring the best match of quality to the amount of storage space available on the DVD, which itself can vary, thanks to some ingenious technology. The standard DVD holds 4.7 gigabytes of information, but by creating a second layer and refocusing the laser with fine precision, a double layered disc can be created that holds 8.5 gigabytes. If two discs are glued together to create a double-sided disc, then the storage can double to 9.4 and 17.8 gigabytes for single and double layers.

DVD compression works by saving frames in *groups of pictures* (GOP's), with the first frame being digitized in its entirety and the rest being only the difference from the first. The first frame is called a *reference frame* and the subsequent frames are known as *delta frames*. For random, single frame retrieval, the player searches to the nearest reference frame and then must decode the delta frames to recreate the exact frame location desired.

Along with the video, up to eight audio tracks can be included to provide alternate sound or language tracks for the same video program. Another 32 sub-title tracks can be encoded to allow many different types of text subtitles. Up to nine camera angles can be encoded so the user can change the point of view at any time. And both barcode or computer controlled random access is possible in much the same way as with laserdisc.

This DVD format will allow the same disc to be used by the instructor in the classroom with a computer or barcode controlled player, by the student in a computer lab or home PC setting, or by the instructor or student using a standard DVD player and consumer remote control. For the first time, video content can be distributed on the same medium but have very different treatment based on the equipment it is used in.

The Reality

The promises of this new DVD technology are very great; however, the reality is that the technology is very new and we are only now beginning to think about how to use all of its possibilities. Producing DVD language and classroom materials will require a much different approach than traditional, linear video. These approaches will need new tools and production procedures as well. This will of course increase the cost of the materials.

DVD production is currently very costly and still a rather difficult process. It is true that costs are dropping rapidly—even more rapidly than earlier technologies: but, they are still high. Development tools and authoring systems are still emerging, and the players need improved accuracy for single frame, random access retrieval. Due to the reference frame/delta frame decoding, the actual frame number requested is not always exact—at least in the first production models.

A Pioneering Example

In spite of the difficulties listed above, Brigham Young University has experimented with this new technology to create an Italian language resource for both classroom and individual use based on the motion picture *C'eravamo tanto amati* or *We all Loved Each Other so Much*. This film was chosen to introduce intermediate to advanced students to authentic language usage, including dialect. The movie's subject and its purposeful allegory of post World War II Italian history make it a good springboard for political, socio-economic, cultural, and cinematic discussions. BYU had also previously used this film within a laserdisc application in a language lab setting, so materials had already been created and experience with both lab and classroom use had already been gained. Also, copyright and permissions had already been licensed from the film producers.

Thanks to assistance from Pioneer New Media and Spruce Technologies, a DVD version of the motion picture was created with introductory textual information, scene summaries, and six types of subtitles. The design of the DVD would allow both home and classroom use with the standard DVD player controls, but along with a published instructors guide, it also allows for barcode control. An interactive CD-ROM version was also created for individual use, since computer-controllable DVD is still not available.

For home or individual use, the DVD provides the ancillary texts in both Italian and English. The subtitles give the verbatim dialog in both languages as well. Summary subtitles are available either through the entire summary segment or flash on the screen for only five seconds at the beginning of the segment.

For the instructor the entire dialog of the motion picture has been transcribed and published with barcodes for each scene, each scene segment, and each utterance. This allows the instructor to use any portion of the motion picture for classroom discussion or illustration. Sample study questions are also included in the instructors guide along with biographies and essays about the actors and the film.

Conclusion

Although DVD technology is rapidly becoming commonplace, it is still in its infancy especially in regards to instructional materials. However, it promises to provide new ways of creating and using language content. It also provides a convenient and portable delivery medium that can be mediated in a variety of ways depending on the playback device being used. With the film *C'eravamo tanto amati*, Brigham Young University has demonstrated a few of these possibilities by producing a DVD that can be used by both the consumer and the instructor to deliver different mediations of the language content. This is just the beginning of new and creative ways to bring video content into the language instruction process.

Using the WebLEAP (Web Language Evaluation Assistant Program) to Write English Compositions

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Abstract

This paper introduces a program called “WebLEAP (Web Language Evaluation Assistant Program)”, a prototype software that aims to support writers by reducing the anxiety in their writing. It informs users of the existence and popularity of expressions in the world. It gets an expression as input and returns the frequencies in Web documents of the word sequences extracted from the given expression by using a search engine. The expression and the numbers are presented graphically so that the user can estimate the result easily and judge with more confidence. We demonstrate its usefulness by illustrating several experiments of finding suitable expressions and solving questions. We also report the results of the experimental classes of English composition and discuss its educational effects. From these experiments, we conclude that such a system has high potential and will become an indispensable tool for all writers in the future.

Introduction

Needs for computer software to support writing as an activity have traditionally been very high. Thanks to word processors, the burden of writing documents is notably reduced. These days, word processors even provide the means of checking spelling and grammatical errors.

Nevertheless, for non-native English speakers such as Japanese people, these facilities are not sufficient. Unlike native speakers they cannot judge the appropriateness of English expressions with confidence even with the benefit of such facilities. Even after checking their compositions, they are afraid that their compositions may include expressions or words that appear in a dictionary and whose combination is grammatically right, but the expression is one that no native speakers would use. It would be a great help for them if they are able to know whether the expressions they are using really exist and/or to know how many of the expressions appear in the world.

A lot of effort has been devoted to creating corpora (British National Corpus, <http://info.ox.ac.uk/bnc/>; ICAME, <http://nora.hd.uib.no/icame.html>), in the field of corpus linguistics (Kudo & Inoue, 1995; Saito, Nakamura & Akano, 1998; Takaie & Suga, 1998; Takezawa & Suematsu, 1995), and to providing the information about usages of expressions. A corpus consists of sample sentences collected from various sources with care.

However the major aim of building up a corpus is to provide analytical tools to the experts of the language such as researchers, linguists, dictionary editors, and so on. These tools are called concordance programs (Simple Concordance Program, <http://sun1.bham.ac.uk/A.Reed/scp/>; TXTANA, <http://www.biwa.or.jp/~aka-san/index.html>; WordSmith Tools, <http://www.liv.ac.uk/~ms2928/homepage.html>). A corpus and a concordance program can be used for assisting writers with their work. However this approach has some problems: (a) Building up a large

corpus requires a lot of effort and is time-consuming. (b) Because of the duration of time needed for building a corpus together with the copyright problem, a corpus is often outdated from the beginning. Furthermore, it is also hard to keep updated. (c) The tools for corpus linguistics are developed for analyzing the target language. Thus the functions provided in such tools may not always be best suited in writing and sometimes they are too complicated to use comfortably for ordinary language learners.

In order to overcome these problems, we took a different approach (Yamanoue, Minami & Ruston, 1999). Instead of constructing and using a corpus, we use the Web documents as a corpus, which we call the “Web-corpus.” Thanks to the rapid popularization of the Internet, huge amounts of documents have been created and their existence is recognizable by using the search engines (AltaVista, <http://www.altavista.com/>; Lycos, <http://www.lycos.com/>; Yahoo, <http://www.yahoo.com/>). We have the following advantages in utilizing these documents as a corpus: (a) The Web-corpus exists as is and thus is maintenance free. We can use it without effort in creating and maintaining the corpus. (b) The Web-corpus is the collection of the current expressions of the language, and is up-to-date at any time. (c) Considering the coming network age, expressions in the Web-corpus will affect the language in the near future. Therefore we may be able to catch new ideas together with new terms and to use them before they become very popular. (d) A lot of applications have been developed and many more are under development on the Internet. We can use them as tools for the Web-corpus.

The aim of this paper is to describe a system that uses the Web-corpus and demonstrates its usefulness and importance. The rest of this paper is organized as follows: In Section 2, we describe the design and implementation of the system. In Section 3, we demonstrate the usefulness of our system through various application examples and our experience in experimental classes. In Section 4, we clarify the features of our system in comparison with other similar systems. Finally in Section 5, we summarize this paper and present some possible future work.

The WebLEAP System

The WebLEAP (Web Language Evaluation Assistant Program) system is developed as a concordance program for the Web-corpus. Unlike other approaches, WebLEAP deals mainly with the frequencies of documents that include the word sequences that are found in a search engine.

Figure 1 shows a screen shot of this system. This is for comparing the two phrases “he is married to” and “he married with.” At the top of the screen of Figure 1 is the input area. The function buttons are lined up on the left. The “eval” button is for analyzing the expression in the input area. The “clear” button is for clearing the input area. The “move” button is for transferring the graphical representation of the result to the lower area. This function is for comparing two results.

The system organization is illustrated in Figure 2. The system works as follows: The user inputs a target sentence or an expression to the system. The word sequence generator divides the given sentence or expression into the sequence of consecutive words.

The minimum number of words is normally one or two and the maximum number is normally four. The generated word sequences are given to the search engine driver one by one. The driver sends the word sequence to a search engine as the key string for the search. The search engine returns the results. The document analyzer analyzes the HTML documents that are returned from the search engine and extracts the frequency number for the Web documents that hit the given key; i.e., the word sequence. The frequencies are presented to the user by the presenter through the graphical user interface.

Experiments

In this section we demonstrate the usefulness of WebLEAP by showing several experiments.

“see/watch” the “TV/movie”

We have learned that TV should be “watched”, and movies should be “seen”. Let’s check this.

The results are summarized in Table 1. The ratios of the numbers for “see the TV” and “watch the TV” to the number for “the TV” are about 0.4% and 0.8%, respectively. Thus “watch” is more popularly used than “see” for TV. For “movie”, “see” is used in about 2.9% and “ watch” in about 1.4%. Thus for “movie”, “see” is more popular than “watch.”

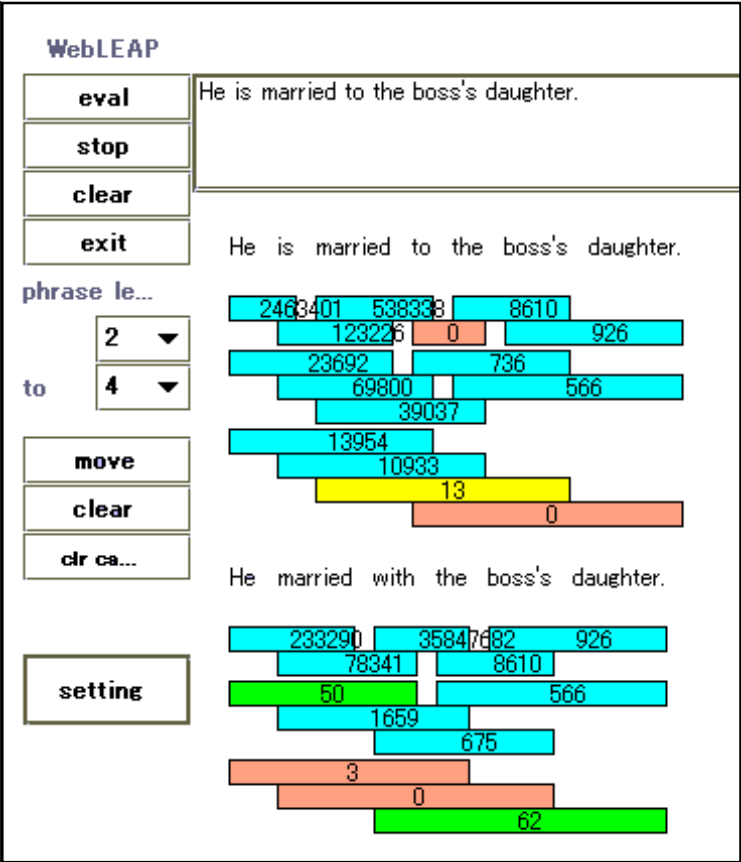


Figure 1. Screen shot of WebLEAP: Comparing “He is married to” and “He married with”

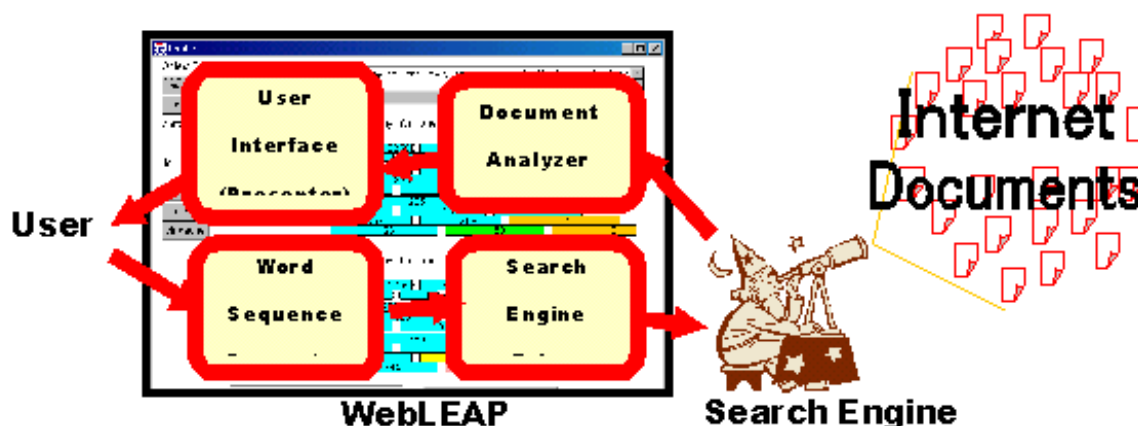


Figure 2. System organization

We investigated further by checking several Web documents that are hit by the search engine and found that “see the TV” only appeared as a sub-expression as in “see the TV image”, “see the TV program”, and so on. Thus we conclude that “see” is not correct for “TV”. On the other hand, “watch the movie” is used with this meaning. So we conclude that both expressions are acceptable. From the frequencies we conclude that people “see” more often than “watch” the movies.

Table 1. Comparison of the Frequencies for the Combinations of “see/watch” and “TV/movie”

“the TV”	“see the TV”	“watch the TV”
216,107	873 (0.4%)	1,593 (0.8%)
“the movie”	“see the movie”	“watch the movie”
472,776	13,638 (2.9%)	6,666 (1.4%)

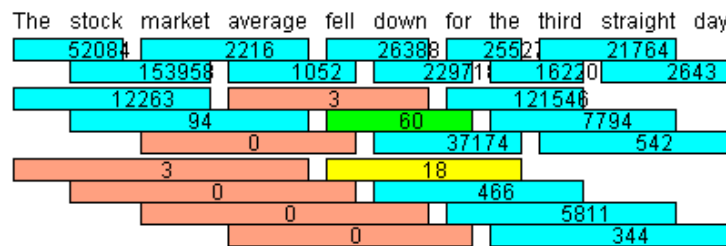
Proper Nouns

WebLEAP is useful to check the correct spelling of names. Suppose we would like to know which one is correct among “Bertrand Russell” and “Burtrand Russell”. We asked to WebLEAP and found that the former one counted 12575 and the latter only 3. We concluded “Bertrand Russell” is correct.

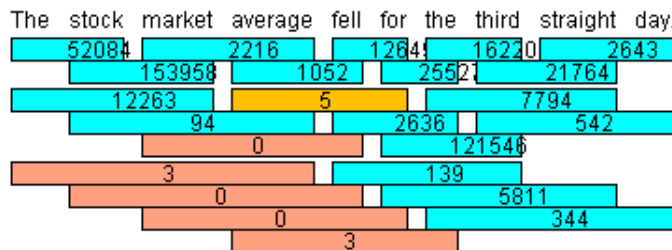
Next let us suppose we know either “Jenolan caves” or “Genolan caves” exists in NSW, Australia, but we don’t know which spelling is correct. We do not find either name in our dictionaries. According to WebLEAP the former counted 992 and the latter only 2. So we concluded that “Jenolan caves” were correct.

Application to TOEIC Questions

We used WebLEAP to solve the 20 questions of a TOEIC (Test of English for International Communication) (<http://www.toEIC.or.jp/>) test. The testees are asked to choose one that should be corrected or rewritten among the four candidates of words and phrases for each sentence. In 13 questions we got sufficient information to solve them successfully. In two questions we got insufficient information to solve. We guessed and reach the right answers by comparing the original and corrected expressions. In five questions we did not get any useful information.



(A) Analysis of a TOEIC question that includes a wrong part



(B) Analysis of the corrected sentence

Figure 3. Applications to TOEIC problems.

The following is an example of a successful question.

The stock market average fell down for the third straight day.

A

B

C

D

The result of the system for this sentence is shown in Fig.3(A). The frequency of “average fell down” is 3 and that of “fell down for” is 60. The frequencies of phrases containing three words before and after them are over 100. These results indicate that the part B in the question sentence is not used so much in the context.

On the other hand, the result obtained from the sentence which is corrected by rewriting the “fell down” to “fell”, is shown in Fig.3(B). The frequency of “average fell for” in Fig.3(B) is 5 and that of the corresponding part “average fell down for” in Fig.3(A) is 0. The frequency of “fell for the” in Fig.3(B) is 2636 and that of the corresponding part “fell down for the” in Fig.3(A), is 18. The correct answer of this question is B. The system suggests the place that should be corrected. According to a reference book (International Communications Limited, 1999), only 9.4% of the testees gave the correct answer.

The following sentence is a failure example. We couldn’t get the appropriate information.

Each of the machine parts are guaranteed for ninety days.

A

B

C

D

This sentence has the “Each” in the head of the sentence. So “are” should be “is”. Our system couldn’t solve this problem because “Each” and “is” are separated; 4 words exist in between.

Experimental Classes

We made two experimental classes in order to estimate the effects of WebLEAP in writing English essays. The number of the students participate the classes is 11. They are supposed to write short and simple essays in 30 minutes. In the first class they did not use WebLEAP and in the second class they did.

Table 2. Resulting Scores of the Experimental Classes

Student	Essay 1			Essay 2		
	Errors	Words	Density	Errors	Words	Density
1	5	53	9%	4	48	8%
2	9	43	21%	6	32	19%
3	5	31	16%	4	36	11%
4	4	34	12%	7	33	21%
5	5	34	15%	6	42	14%
6	5	34	15%	4	39	10%
7	5	39	13%	8	40	20%
8	6	54	11%	1	11	9%
9	3	35	9%	3	40	8%
10	4	34	12%	5	32	16%
11	4	33	12%	7	32	22%

The result is summarized in Table 2. We evaluated the effect of using the system with the error density; i.e., the number of errors per word. We compared the error densities for the essay one and two. More than half of the students got a decrease of the error densities; 7 out of 11, precisely.

From this experiment we recognize some extent of effect of WebLEAP to reducing error density. Considering that the current system is in the early stage, we might be able to say that the WebLEAP system has fairly high potential in helping its users with writing good English essays.

Despite such potential, the current system is not sufficient in its design as a writer's assistant program; especially for beginners of English. In order to utilize the system and get much information and knowledge, the users are supposed to be at a somewhat high level of using English. Unfortunately, most of the university students in Japan are considered to be at lower than such a level, they would need to have supports from their teachers when using WebLEAP.

On the other hand, it is a good point for the system that almost all the students reported us that using the system was quite enjoyable. From the educational point of view, a system that is developed for assisting users is supposed to be one that they enjoy using, and hopefully they are excited about using it. We have to point out here that giving the frequencies is a good choice in terms of educational effects of a system. The users are supposed to think hard what the numbers mean by comparing the differences of those of two expressions. Through such a process, the users learn what expressions are used popularly and what expressions are not used so much.

Related Work

A number of concordance programs have been developed in the field of corpus linguistics. However most of them were rather designed as tools for experts in linguistics, so that they are too sophisticated for ordinary people in their daily activities. WebLEAP is developed for such people. In this section we take up and illustrate some of these systems and clarify the differences.

Satoh's system (<http://www.senshu-u.ac.jp/~thc0408/>) is the closest one to our system in terms of the aim. It also has accesses to the Web documents through a search engine. This system outputs the KWIC (KeyWord In Context) index of the given keyword, whereas our system outputs the graphical representation of the frequencies of

words or phrases in an expression. TXTANA (<http://www.biwa.or.jp/~aka-sanindex.html>) and WordSmith Tools (<http://www.liv.ac.uk/~ms2928/homepage.html>) provide a collection of tools to analyze languages for the corpora. It covers KWIC, collocations, and many others. Roughly speaking, these tools are for experts. Most ordinary users will not be able to use them with satisfactory results. Our system, even in its primitive stage, is easier to use for the inexpert users. SARA (SGML Aware Retrieval Application) (<http://info.ox.ac.uk/bnc/sara/index.html>) is a software to access British National Corpus (BNC), which is a large corpus of written and spoken English. SARA also supports to analyze the ordinary corpus (in this case, the BNC corpus).

There are also other types of writer's assistant. "SUIKOU" (Ushijima, Suganuma, et al., 1993) is a system for writers in Japanese to assist in revising their writings. It takes a different approach. It tries to find out the places that could be problematic. Our system aims to assist creating ideas and to weeding out the expressions that are not actually used by native writers. The Writer's Assistant (Sharples, Goodlet & Pemberton, 1992) is a prototype writing environment that combines an idea organizer with a document structure editor and a text editor. It intends to help the user with mapping out ideas and organize the document structure, whereas our system helps the user with writing sentences and phrases.

Concluding Remarks

In this paper we introduced a program called "WebLEAP (Web Language Evaluation Assistant Program)", a prototype software that aims to support the writers with reducing the anxiety in their writings. It informs the users of the existence and the popularity of the sub-expressions of the given expressions and/or sentences according to the frequencies of them found in the Web documents. From the popularity number the users are able to know if the expression is one that has been used in the past or is a totally new invention. Further, the popularity numbers give the users good tips so that they can decide which expression to use with more confidence.

Comparing to the ordinary corpora used in the corpus linguistics, our approach of using the Web documents as a distributed huge corpus, has advantages such as: (a) It takes a huge amount of time and elaboration in order to establish an ordinary corpus, whereas in our approach we just use the Web documents as is. (b) Because of this the ordinary corpus easily becomes outdated, whereas our corpus is always up-to-date. On the other hand the "Web-corpus" of our approach includes a lot of noise documents (i.e. documents of little or no use which merely distract) and thus the user is required to have skill to judge and decide how to use the results. Therefore we can say that our approach is rather a proposal for a new type of corpus and its usage to complement the use of ordinary corpora than a substitute for them.

In this paper we also demonstrated the usefulness of the Web-corpus by presenting several kinds of usages of WebLEAP which include some experiments for finding suitable expressions, comparing two expressions, solving questions, and so on. We also reported the experimental classes of English composition and discussed the usefulness of the system.

Even though the WebLEAP system is still in a primitive stage, we are convinced from our experiences that it will open up a new dimension towards the truly helpful writer's assistant.

In order to step further to realize such a system we need further research and development including the following topics: (a) In the current system, it involves solely the frequency data with the information from a search engine. We have to investigate the method of integrating other services provided in the Internet so that the system provides more useful tips to its users in writing. (b) As a writer's assistant, it is recommendable that the system monitors the user's behavior and gives more personalized services to him or her. (c) More writing activities will be performed in collaboration in the network age. Thus it is essential to adapt the system so that it supports the collaborative writings performed by a group of people working at distance.

Finally we wish to note that the home page for WebLEAP is located at the following URL: <http://www.tobata.isc.kyutech.ac.jp/~yamanoue/researches/WebLEAP/>

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Visualization and Modeling: Analysis of Code Switching and Modes of Communication in a Beginning Chinese Class Facilitated by Electronic Network

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Abstract

This study targets a second semester beginning spoken Mandarin Chinese class at a major Midwestern American university. The purpose of the study is to investigate students' code switching behavior between their native language and the target language in their electronic interaction as well as their choice of public or private modes of communication. This research uses multiple methods, including surveys on students' perception of computer use in language learning, content analysis of e-mail messages, interviews and in-class observations. Quantifiable data from the surveys and content analysis are presented by means of visualization techniques, and the models are constructed out of the data. Furthermore, qualitative data are used to triangulate the findings and justify the models. Findings indicate that students' perception, target language proficiency, and the audience of their electronic messages influence their choice of codes. The findings also reveal that topic relevance and audience influence the students' selection of public and private modes.

Introduction

The project is motivated by students' feedback in the first semester of the Chinese language classes. The students suggest that they should have more opportunities to know and discuss the cultural issues of the target language. It has been claimed that electronic network facilitates teaching especially in cultural exchange (Leh, 1997). By providing proper educational technology incorporated into class instruction, the student-student and instructor-student communication can entail meaningful educational experiences. Consequently, electronic networking is introduced and used as part of the class instruction in the second semester class.

Technologies such as e-mail, bulletin boards, and electronic conferencing have been widely used in foreign language teaching. Today, most college students have the ability to operate such software properly without difficulties. Many language learning projects at the university level involve using e-mail to help students learn from native speakers of the target language. Ruthe (1998) claims that e-mail is effective in teaching cultural awareness, creating a positive affective climate and making the foreign language curriculum more relevant to students. Singhal (1998) reviews several CALL studies and concludes that computer mediated communication (CMC), especially e-mail and teleconferencing, provide authentic communication and foster awareness of both the other language learners and the target language.

Visualization is concerned with obtaining insightful understanding of data by means of graphical representation. As technology advances, the volume of data coming from different sources is multiplying. Visualization, which generates graphical displays out of data, empowers researchers to analyze the data in a visual way so as to better understand a phenomenon under study. Visualization techniques thus appear to be very useful for searching,

analyzing, and understanding the large amount of information on the Internet. Several techniques have been developed to examine network data (e.g., Eick, 1996; Gershon & Eick, 1995). Furthermore, some analyses have been employed to study educational uses of electronic communication. These techniques include InterMessage Reference Analysis, Message Act Analysis, Message Flow Analysis (Levin, Kim, and Riel, 1990), and Participant Structure Analysis (Riel, 1990; Riel & Levin, 1990). Nevertheless, the application of visualization techniques to the analyses of educational CMC interactions is still limited.

Modeling is one of the reasoning skills human beings have used for centuries. In recent years, computer models with accompanying simulation have been used in teaching science. Not only does modeling have more engaging power than verbal instruction, but it can also help students re-conceptualize the abstract ideas in science (White & Schwarz, 1998). The purpose of using modeling in learning is basically to encourage students to test their belief against the models and make the hidden phenomenon evident to the students. Currently, modeling tools, such as Stella and Model-It, have the power to produce models and portray changes along with a variation of variables. Hsu, Kiemeier, Kulsamrit, Tham, Brown, Bievenue, and Aaritsky (1999) prove effective in using modeling techniques to arrange data and explain the mechanism of the selection of communication modes in a distributed learning environment.

Code switching is a salient phenomenon in most second language and foreign language classrooms. Code switching may result from “bilingual code switching”, which means the language user can use both languages alternatively unconstrained, and “incompetence code switching”, which means the language user has different levels of language proficiency in the two languages (Hancock, 1995). Code switching is often viewed as negative or incorrect, but Duran (1994) suggests that it should be regarded as “a more positive linguistic, cognitive, communicative and developmental term.” There are two levels of code switching, mainly, intersentential code switching and intrasentential code switching. According to Hammink (2000), intrasentential code switching is far more complicated than intersentential code switching. Her studies proved that intrasentential code switching proficiency requires an adult command of both languages.

Code choice depends on factors such as norms of the situations. In some second language or foreign language classrooms, speaking the native language is a legitimate taboo among the class. In others, the code choice is unmarked and it leaves students to challenge the norms (Hancock, 1995).

Research Questions

This research will attempt to answer the following questions:

1. In a beginning level language class newsgroup, how often does code switching occur? What is the reason for that?
2. What are the significant differences between the communication pattern of public cultural discussion and private request e-mail?
3. What is the mechanism of mode selection between private e-mail and public newsgroup postings?
4. What is the mechanism of code switching in the beginning level language class?

Methodology

This research uses multiple methods, including surveys of students' perception of computer use in language learning, content analysis of e-mail messages, interviews and in-class observations. Prior to conducting the research project, the researchers solicited students' voluntary participation in the study and assigned pseudonyms to each participating student in order to ensure confidentiality. The surveys are administered twice to students. One is at the beginning of the semester. The first survey focuses on the students' computer competence in using e-mail as

a tool for communication and their expectation of teaching enhancement via e-mail. The other is administered near the end of the semester. The second survey stresses the students' perception and satisfaction of the face-to-face interaction and on-line interaction, and the students' perception of code-switching behaviors. Ten out of eleven students are interviewed based on their in-class and on-line performances and the results of two surveys. One 30-minute interview session for each subject is scheduled prior to the end of the semester. Additionally, the class is videotaped for two weeks to capture its daily routine. Quantifiable data from the surveys and content analysis are presented by means of visualization techniques and the models are thus constructed there from.

Class Description

The class consists of eleven non-native speakers of Mandarin Chinese, two females and nine males. Six of the students are of Chinese heritage who more or less speak Cantonese or Taiwanese at home. The other five are Caucasian or Black Americans who either major in languages or have significant others who are native speakers of Mandarin Chinese.

Data Analysis

Throughout the semester the researchers collect 294 electronic messages including 184 newsgroup or e-mail messages posted to the class and 110 private e-mail communications between the instructor and her students. Private e-mail messages between students are not included in this study. A tally of the message counts indicates that the instructor is the one who sent most messages in each of the two modes, 81 in public and 75 in private. The eleven students contributed a total of 103 public messages and sent 35 private e-mail messages to the instructor.

The contribution made by each student to the public domain ranges from 3 to 20 messages; the messages sent via the private channel range from 0 to 8 per student. On average, each student sent 9.36 public messages and 3.18 private ones. The three charts below summarize the public/private messages sent by each student, the total word counts in the two modes of communication, and the use of Chinese found in the public and private modes, respectively.

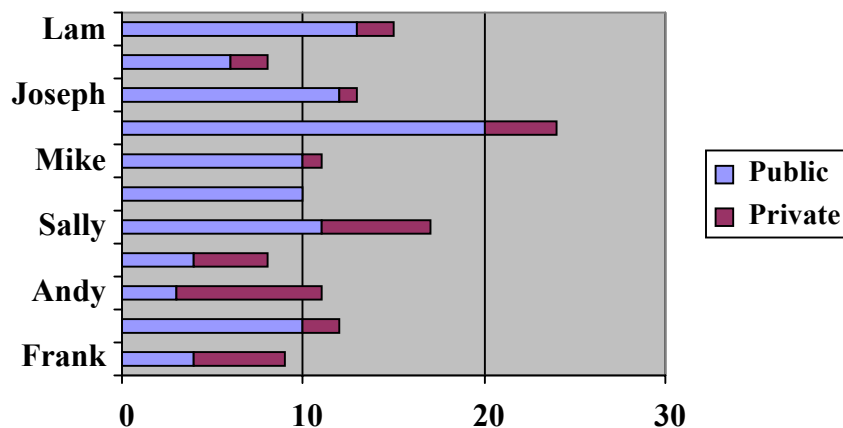


Figure 1. Public/Private messages sent by each student

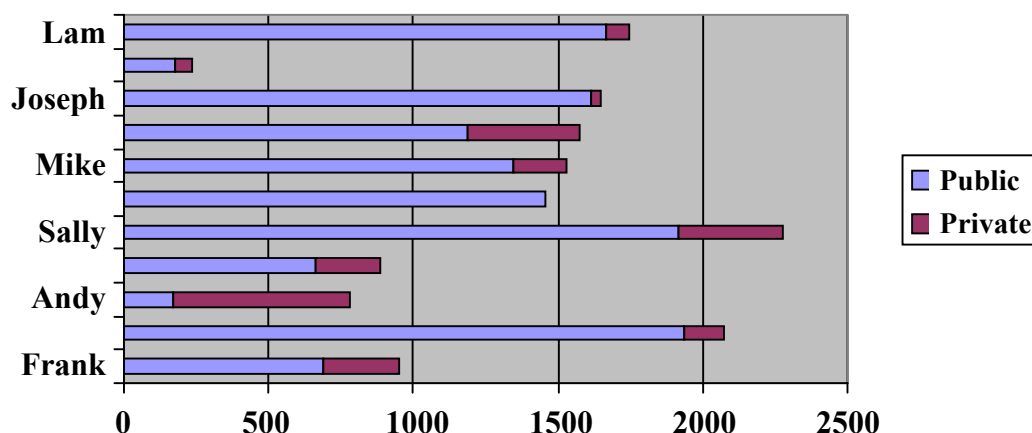


Figure 2. Total word counts in both public and private messages sent by each student

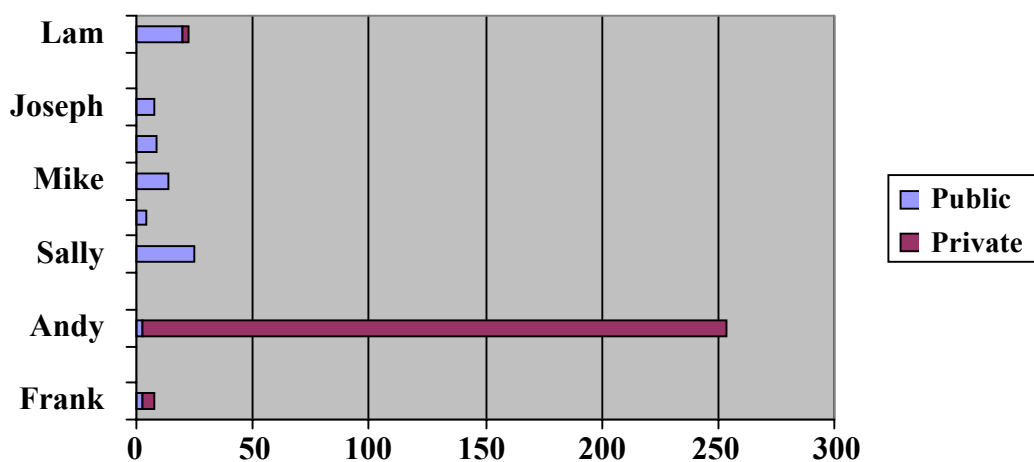
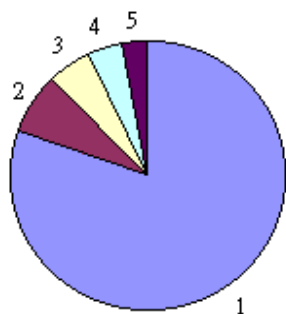


Figure 3. Total Chinese words in both public and private messages sent by each student

In terms of message topics, the majority of the messages sent by the instructor are related to administration, whereas the students contribute more to cultural discussions. The messages sent by the instructor and the students as a whole are categorized in following five types based on the message content: administration, cultural topic discussion, social topics, discussion on class materials, and other. The two pie charts below illustrate the categorization of the messages:



Themes from Instructor's Messages



Themes from Student's Messages

- 1 = Administration
- 2 = Cultural topic dicussion
- 3 = Social topics
- 4 = Discussion on class materials
- 5 = Other

Figure 4. Message themes

E-mail Use Survey

According to the result of the E-mail Use survey, the students on average have used e-mail as a communication tool for three years. 72% of the students check e-mail several times a day, and 54% of the students engage in e-mail communication for about three to five hours per week. E-mail is used mainly for communicating with their friends and family members. The students are confident using e-mail software. As far as the use of e-mail in their language learning, 45% of the students have had the experience of using e-mail in their language classes. However, 73% of the students do not believe that e-mail would benefit their learning. About 50% of the students like to use e-mail in the class instruction.

End of the Semester Survey

According to the end of the semester survey, 64% of the students enrolled in this class have a general preference for using the face-to-face mode over face-to-face and on-line modes combined. For this class, 73% of the students prefer face-to-face and 27% prefer both of the modes to interact with their classmates. 67% of the students prefer face-to-face and 36% prefer both modes to communicate with their instructor.

The students are active in both face-to-face interaction and on-line interaction in the class. However, there are significant differences between their face-to-face interaction and on-line interaction (sig. = 0.002). In terms of satisfaction, the students are satisfied with their face-to-face and on-line interaction with their instructor and less satisfied with peer students. Overall, they are positive in their satisfaction. As far as comfort is concerned, the students are comfortable both in face-to-face and on-line interaction.

Regarding code switching, the students feel comfortable speaking Chinese and English in class but less comfortable using Chinese (Pinyin) to interact on-line. 54% of them find inputting Pinyin difficult. As to the language norm, only 18% of the students feel obliged to speak Chinese in class and only 9% of the students feel obliged to interact in Chinese on-line.

Communication Patterns

The threaded newsgroup discussion on topics related to culture follows a similar interaction pattern. The topics discussed include globalization, cultural identities, human rights in Tibet, and values on child rearing, most of which are of the students' choice. After the moderator of the week introduces a topic of his/her concern and invites class participation, the class starts to post messages on the specified topic. Usually an initial message brings out six or seven responses over that week, but the topic is seldom re-visited afterwards. Figure 6 is an illustration of a typical pattern concerning cultural discussion:

The communication pattern in the private mode is fairly linear. It is always composed of a request and a response. Since the messages are kept private, therefore, the sender and receiver are the two parties in interaction. There are cases when the student sends a private request but the instructor sends her reply to the class as a public e-mail message. However, it is less common for the instructor to send a private request to a student and that student replies to the class (Figure 7).

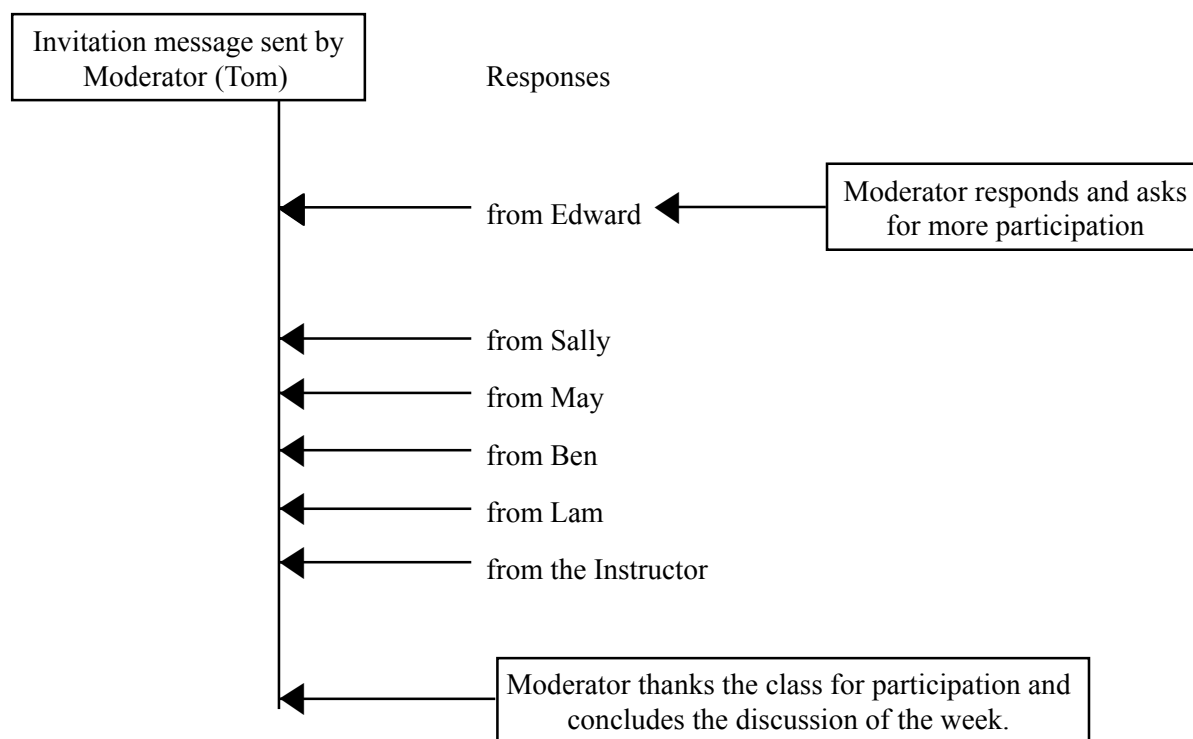


Figure 6. Communication Pattern in the Public Mode

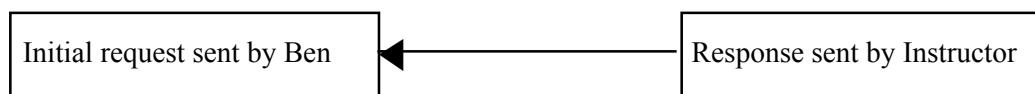


Figure 7. Communication pattern in the private mode

Modeling

Modeling is used to illustrate the code selection and mode selection mechanism. As showing in Figure 8, the code selection mechanism is decided by the following four factors: students' perception, language proficiency, audience and class norm. Students' perception refers to their personal preference and perceived importance of using the specific code. Proficiency refers to the students' language ability in the target language and the different level of proficiency between the target language and their mother tongue. Audience refers to their intended audience in the communication situations. Class norm is the norm for language use in the class.

Discussion

On-line Participation

The students' degree of contribution is influenced by the topic of the week, accessibility to the class newsgroup, and the perceived usefulness of the newsgroup. Because participation in newsgroup discussion is voluntary, the students do not feel obligatory to contribute. However, several students report that their participation is topic-dependent. That is, they are more likely to write when they find a topic under discussion is relevant to them.

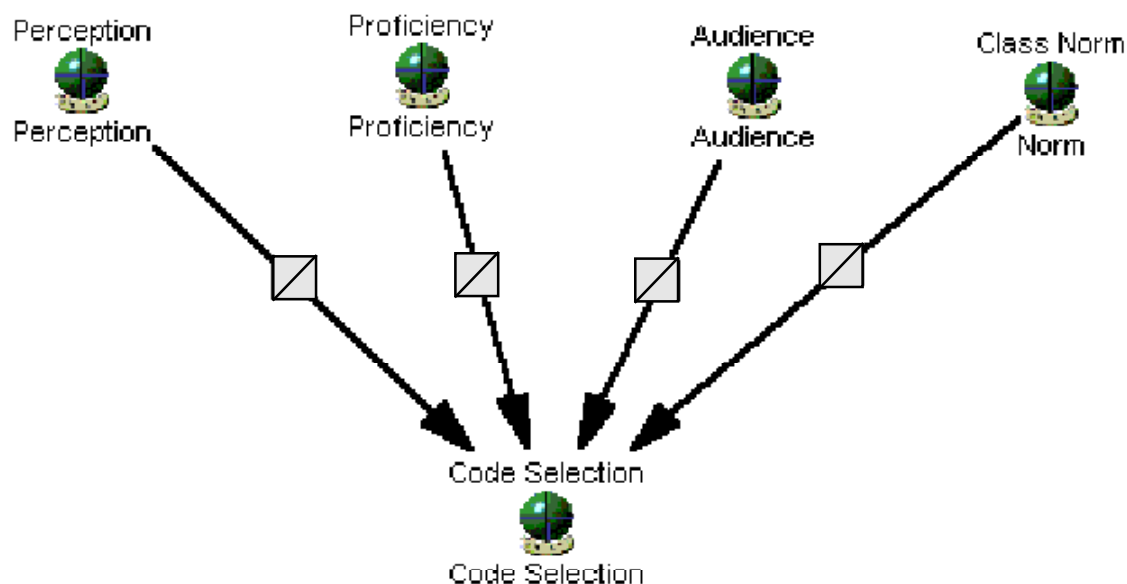


Figure 8. Code mechanism

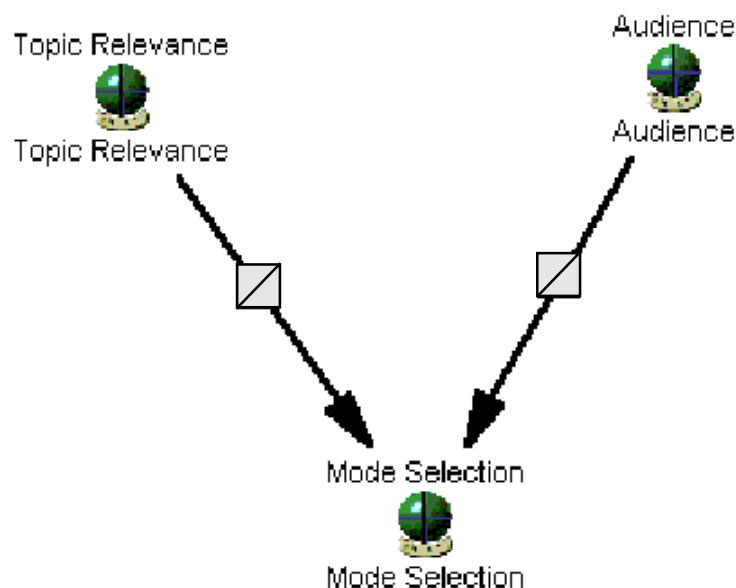


Figure 9. Mode selection mechanism

As indicated in the survey administered at the beginning of the semester, the majority of the students do not believe that the newsgroup would be beneficial to their learning of Chinese. Outside of the instructor's expectation that the newsgroup is an ideal space for discussion on Chinese culture, the students tend to see this public forum as a channel to know their fellow students better. As one student put it during the interview, "I... get to know people better with newsgroup." Another student felt that the newsgroup helped her learn what other people think but nothing about the Chinese language. The students with Chinese origins find the newsgroup less informative in terms of Chinese culture, whereas their counterparts feel the information useful.

Code Switching

Code switching is not a salient feature in the students' electronic communication. On average, there is less than one Chinese word used per e-mail message sent by the students. The Pinyin system, which the researchers thought might discourage the use of Chinese on-line, apparently plays a minor role in the students' selection of the codes in written communication. In interviews, the students mentioned that they do not favor inputting Pinyin, but neither do they see it a major obstacle for their use of Chinese. However, according to the end of the semester survey, about half of the students feel that inputting Pinyin is difficult for them. The proper explanation for this is that inputting Pinyin involves two abilities, typing in general and proper expression. For most of the students, typing Pinyin in general is not an obstacle, since the Pinyin system uses the Roman alphabet. But they would find it difficult to express themselves properly using the target language. Therefore, the lack of Chinese use in on-line discussion is mostly due to the students' Chinese proficiency and the nature of the topics discussed.

It is true that as beginning learners of Chinese, the students do not know enough linguistic structures or vocabulary to communicate fully in Chinese. However, they do not try hard to use the structures or vocabulary known to them, but choose to use English most of the time. Chinese is kept to a minimum and primarily used as greeting words. This may partly result from class norm. According to the end of the semester survey, many students do not feel obliged to use Chinese (Pinyin) to interact on-line. Since their proficiency in the target language and their mother tongue are in great asymmetry, the students opt for the use of English in discussion. As a student points out, "It's easier, fast."

The students also consider the audience of their electronic messages. During the interview, one student points out that in the newsgroup discussion, the instructor is the only one who uses Pinyin, but everybody else uses English. When a sender assumes that the audience has a better command of their native language (in this case, English) than the target language, h/she tends to use the native language which is more easily understood by the audience.

Mode Selection

On the newsgroup, most of the messages are dedicated to cultural discussions. The students also ask administrative questions about exam dates and material to be covered in exams. They make use of the forum to share their personal experiences, and their views regarding specific cultural topics. Because there is no guarantee of response, for questions that the students expect quick answers, they usually write directly to the instructor.

In the private mode, most of the messages are dedicated to administrative issues. The students ask questions about absence and dropping quizzes. In addition, the instructor uses a lot of private e-mail messages to give each student feedback on his/her weekly quizzes. Since information in the private messages is specific to individuals, the private mode is consequently chosen.

There are cases of mode switching performed by the instructor, who sends her reply to a private e-mail via the public mode. For example, one student corrected the instructor's misspelling in a private e-mail message. The instructor agreed with the student's suggestion and later sends her comments along with the message using the public mode. The selection of modes for communication apparently depends on the topics and the audience of the electronic messages.

Suggestions for Future Instruction

Technical Aspect

E-mail has been used commonly among the students in this university. However, one student in this class has a problem with his university account and thus does not have newsgroup access. The university e-mail administrator

cannot solve the problem until near the end of the semester, so the student is unable to use the newsgroup for most of the semester. Accordingly, the instructor has to resort to a public e-mail list when she announces administration issues. Although use of Internet is gradually becoming a common practice in most United States universities, sometimes communication technology does fail. Therefore, instructors should have enough technical support when communication technology is used as part of class instruction.

Curriculum Aspect

The incorporation of the use of technology in this class is viewed as independent of class instruction by some students. In order to effectively incorporate technology into class instruction, it is essential to carefully select the textbook and restructure the language curriculum. Instructors who wish to make technology part of the language curriculum should begin by designing individualized or collaborative on-line activities that facilitate the learning of the Chinese language. When technology becomes an integral part of the curriculum, students can then see the connection of the use of on-line communication to their language learning.

Code Switching

Code switching is not a dominant phenomenon in the class' electronic messages. This may be due to the fact that the research is conducted in a beginning level language class. Furthermore, only the instructor is a native speaker of the target language. Use of target language could cause the messages incomprehensible to the audience at large, especially when the senders do not have a good command of the target language. Therefore, there is not as much code switching as the researchers had expected.

Although the students seldom use code-switching on-line, they switch more in class when they are required to do activities in the target language. Based on class observations, most of the code switching in class is in the intersentential level. In class activities, they produce sentences in the target language. However, when they have questions, they switch back to English to ask questions. Both the instructor and the students feel that the use of code switching assists in the understanding of the target language and helps them integrate the two languages. Therefore, instructors should tolerate code switching when students have problems communicating in the target language, and should view it as part of the language development.

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Washback Effect of the Introduction of a Listening Test into a National University Entrance Examination

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Abstract

This paper presents the results from a questionnaire designed to explore what effects a listening subtest on a national university's entrance examination has had on English teaching at the high school level in Japan. It also looks at how the introduction of a listening subtest on the nationwide university entrance examination has affected teaching in Korea and compares the results to those in Japan. Our study concludes the following: (a) When teachers are faced with the reality of an entrance test, they alter their teaching; (b) When there is a nationwide standardized entrance test, the washback effect is even stronger on planning and instruction; (c) The inclusion of the listening tests on a nationwide central examination offers opportunities for positive washback effects; (d) A negative washback effect can be seen in teachers teaching to the test, and (d) Professional cooperation with other teachers in the region might be seen as a positive washback effect.

Introduction

In 1997, Kumamoto University (KU), a national university consisting of seven departments, started giving a listening test in its English language examination. A study group at KU gave a Pre-TOEFL test to about 300 freshmen over 3 years: in a year before the introduction (Sohguchi et al, 1996); in the year of the introduction (Sohguchi et al, 1998); and in a year after the introduction (Takaki et al, 1999). Takaki et al (1999) report the results of the Pre-TOEFL test shown in Table 1 and conclude that the students' listening competence improved slightly while their grammar and composition abilities were generally on the decrease. This may suggest that the high schools or preparatory schools have become more involved in their preparation for the listening test in the entrance examination. This leads us to consider the washback effect on high school English education. Washback effect indicates the influence the test has on classroom instruction.

Table 1. The Results of the Pre-TOEFL Over Three Years

Year	N	Mean	Sec I	Sec II	Sec III	High	Low
1996	294	409.1	39.8	42.0	41.0	500	323
1997	298	403.3	40.7	40.3	40.1	500	323
1998	292	401.7	40.6	39.7	40.2	500	303

Sec I refers to the scores for Listening Comprehension; Sec II, Structure and Written Expression; and Sec III, Reading Comprehension.

Research Design

This study sets out to confirm how the introduction of the listening test into the entrance examination of a national university has affected English teaching at high schools. Although the main focus of the study is to examine the washback effect in Japan, we also consider the situation in Korea. In 1993, Korea introduced a listening test component on their national university entrance exams. The test is referred to as College Scholastic Ability Test of Korea (CSAT). Since the inclusion of the English subtest on the CSAT, a positive effect on classroom learning has been reported (Lee, 1999). As a frame of reference we also examine the washback effect in Korean high schools. This brings us to another research question in this study: How has the listening test affected English teaching at high schools in Korea and how do the results correlate with the situation in Japan?

Subjects

In Japan, a written survey was sent to 65 Japanese high school teachers of English (JTE) in the Kumamoto area and 35 teachers sent back replies (53.8% return rate). All teachers were head teachers of the English departments at their respective schools. In South Korea, a similar survey was delivered to high school teachers (KTE). A total of 50 questionnaires were prepared and 32 KTEs responded (64% return rate). The teachers were full-time high school English teachers.

Results and Discussion

In Question 1 of our survey to JTEs in Kumamoto, we asked how many students at each high school apply for KU every year, and then high schools were divided into three groups according to the number of the applicants to KU. In Table 2, High Application (HA) group consists of 8 schools which sent more than 50 applicants; Middle Application (MA) group consists of 8 schools which sent between 11 and 50 applicants; and Low Application (LA) group consists of 19 schools which sent less than 10 applicants. We analyze our data based on this classification and also compare the results with those obtained from a similar questionnaire given to KTEs.

Table 2. Three Groups Classified According to the Number of the Applicants to KU

	LA	MA		HA	
No. of Applicants	0 - 10	11 - 25	26 - 50	51 - 99	More than 100
No. of Schools	19 (54.3%)	5 (14.3%)	3 (8.6%)	4 (11.4%)	4 (11.4%)

In Question 2, we asked if teachers agree with the introduction of a listening test on the entrance examination. Table 3 and 4 show that both JTEs (71.4%) and KTEs (90.6%) were in favor of including the listening test on the entrance examination. It should be pointed out that the CSAT in Korea is representative of the central examination for all universities in Korea whereas the listening test concerning the JTEs of this study is for one national university's entrance test. Moreover, in Korea the CSAT has been introduced since 1993 and in Japan the listening test on the University's entrance exam has been introduced only in the past three years.

Table 3. JTE's Responses to the Introduction of a Listening Test into KU's Exam.

	Strongly disagree	Somewhat disagree	Undecided	Somewhat agree	Strongly agree
HA	0 (00.0%)	0 (00.0%)	0 (00.0%)	3 (37.5%)	5 (62.5%)
MA	0 (00.0%)	1 (12.5%)	2 (25.0%)	2 (25.0%)	3 (37.5%)
LA	0 (00.0%)	1 (05.3%)	5 (26.3%)	4 (21.1%)	8 (42.1%)
All JTE	0 (00.0%)	2 (05.7%)	7 (20.0%)	9 (25.7%)	16 (45.7%)

Table 4. KTE's Responses to the Introduction of a Listening Test into the CSAT.

	Strongly disagree	Somewhat disagree	Undecided	Somewhat agree	Strongly agree
KTE	0 (00.0%)	0 (00.0%)	3 (09.4%)	9 (28.1%)	20 (62.5%)

In Question 3, we asked how teachers feel about the contents or formats of the listening test for measuring students' communicative listening abilities. Table 5 shows none of JTEs thinks the test is inappropriate, and 28.6% said it is appropriate. However, about half (51.4%) are undecided.

Table 5. JTE's Responses to the Contents or Formats of the Listening Test on KU's Exam

	Very inappropriate	Somewhat inappropriate	I don't know	Somewhat appropriate	Very appropriate
HA	0 (00.0%)	0 (00.0%)	5 (62.5%)	2 (25.0%)	0 (00.0%)
MA	0 (00.0%)	0 (00.0%)	3 (37.5%)	1 (12.5%)	3 (37.5%)
LA	0 (00.0%)	0 (00.0%)	10 (52.6%)	4 (21.1%)	0 (00.0%)
All JTE	0 (00.0%)	0 (00.0%)	18 (51.4%)	7 (20.0%)	3 (08.6%)

Table 6 indicates that 59.4% of KTEs found the test to be appropriate, and more than one-third (37.5%) were undecided. Comments of both JTEs and KTEs range from 'the test was appropriate as it adequately measured the students' proficiency and what the students cover in class' to 'the test should be improved to include items that better measure various situations of everyday communication.' In respect to the washback effect, a KTE reported *some types or styles of questions are a bit stereotyped, so students are likely to practice only those typical types of questions*

Table 6. KTE's Responses to the Contents or Formats of the Listening Test on the CSAT

	Very inappropriate	Somewhat inappropriate	I don't know	Somewhat appropriate	Very appropriate
KTE	0 (00.0%)	1 (03.1%)	12 (37.5%)	15 (46.9%)	4 (12.5%)

In Question 4, we asked how much teachers familiarize themselves with contents or formats of past listening tests of entrance examinations in order to prepare students for future entrance tests. Table 7 shows that more than a third of the JTE HA group (37.5%) said they do familiarize themselves and an additional 25% said they are a little familiar with the contents of the test, whereas in the MA 50% either did not or not so much familiarize themselves with the contents of the test and more than two-thirds of the LA group did not (47.4%) or "not much" consider (21.1%) the contents of the test.

Table 7. JTE's Consideration of the Contents or Formats of the Listening Test on KU's Exam

	Not at all	Not much	A little	Much	Very much
HA	3 (37.5%)	0 (00.0%)	2 (25.0%)	2 (25.0%)	1 (12.5%)
MA	2 (25.0%)	2 (25.0%)	3 (37.5%)	1 (12.5%)	0 (00.0%)
LA	9 (47.4%)	4 (21.1%)	4 (21.1%)	1 (05.3%)	0 (00.0%)
All JTE	14 (40.0%)	6 (17.1%)	9 (25.7%)	4 (11.4%)	1 (02.9%)

On the other hand, Table 8 illustrates about two-thirds (65.6%) of the KTEs paid “much” or “very much” attention to the formats of the listening test. Consequently, most KTEs (96.9%) considered the formats of the listening test in their instruction.

Table 8. KTE's Consideration of the Contents or Formats of the Listening Test on the CSAT

	Not at all	Not much	A little	Much	Very much
KTE	0 (0.0%)	1 (3.1%)	10 (31.3%)	13 (40.6%)	8 (25.0%)

In Question 5, we asked how much teachers have changed their lesson planning or instruction because the listening test is now on the entrance examination. As Table 9 shows, more than one-third (37.5%) in the HA group said they either changed “a little” (25.0%) or “much” (12.5%), while in the MA group one-fourth said they changed “a little.”

Table 9. Influences on JTE's Lesson Planning or Instruction

	Not at all	Not much	A little	Much	Very much
HA	3 (37.5%)	2 (25.0%)	2 (25.0%)	1 (12.5%)	0 (0.0%)
MA	3 (37.5%)	3 (37.5%)	2 (25.0%)	0 (0.0%)	0 (0.0%)
LA	14 (73.7%)	4 (21.1%)	0 (0.0%)	1 (5.3%)	0 (0.0%)
All JTE	20 (57.1%)	9 (25.7%)	4 (11.4%)	2 (5.7%)	0 (0.0%)

In the JTEs comments reasons given for not changing much were related to the fact that the introduction of Oral Communication B which emphasizes listening has already caused the change. Others said that they have already altered their instruction to suit listening because of school listening tests or other university entrance tests besides KU. On this same question, as Table 10 shows, a majority of KTEs reported that their planning has been “a little” (34.4%), “much” (34.4%) or “very much” (12.5%) changed due to the listening test.

Table 10. Influences on KTE's Lesson Planning or Instruction

	Not at all	Not much	A little	Much	Very much
KTE	1 (03.1%)	5 (15.6%)	11 (34.4%)	11 (34.4%)	4 (12.5%)

In Question 6, we asked if teachers use the contents or formats from past listening tests in their lesson plans and/or instruction. Table 11 indicates that a majority of JTEs (62.9%) said they “never” use past tests, and more than a third said they include some formats of past listening tests into their instruction. However, in the HA and MA groups more than half of the JTEs said they use the formats of past listening tests.

Table 11. JTE's use of the Contents or Formats from Past Listening Tests

	Never	A little	Sometimes	Frequently	Always
HA	2 (25.0%)	1 (12.5%)	4 (50.0%)	0 (00.0%)	1 (12.5%)
MA	4 (50.0%)	0 (00.0%)	2 (25.0%)	2 (25.0%)	0 (00.0%)
LA	16 (84.2%)	3 (15.8%)	0 (00.0%)	0 (00.0%)	0 (00.0%)
All JTE	22 (62.9%)	4 (11.4%)	6 (17.1%)	2 (05.7%)	1 (02.9%)

Table 12 shows that most KTEs (87.6%) said they use contents of past listening tests in their instruction. Only 9.4% said “never”. The fact that KTEs use past test contents may reflect that teachers are responding to the pressures of helping their students attain success in passing the CSAT. This can be interpreted as a negative washback effect.

Table 12. KTE's use of the Contents or Formats from Past Listening Tests

	Never	A little	Sometimes	Frequently	Always
KTE	3 (9.4%)	5 (15.6%)	10 (31.3%)	11 (34.4%)	2 (6.3%)

According to Mehrans (1989), one problem about standardization achievement is that when test scores are used for making important decisions, teachers may teach the test too directly. This would imply negative washback effect, as teachers would be limiting their teaching to the narrow confines of the contents on tests in order to help their students achieve a higher rate of success on them. In doing so, teachers may be sacrificing the wider goal of helping students to effectively develop their communicative abilities.

In Question 7, we asked if JTEs agree that including the listening test on the National Center Test for University Entrance Examinations (NCT) is a good idea. Presently, in Japan, there is no listening test on the NCT; however, this policy may change in the future. Table 13 shows that about two-thirds of the teachers agreed (45.7% “strongly agreed” and 20.0% “somewhat agreed”) that it would be a good idea, and less than a fourth (22.9%) weren't sure—only 5.8% disagreed.

Table 13. JTE's Responses on the Introduction of a Listening Test into the NCT

	Strongly disagree	Somewhat disagree	I don't know	Somewhat agree	Strongly agree
HA	0 (00.0%)	0 (00.0%)	2 (25.0%)	1 (12.5%)	4 (50.0%)
MA	1 (12.5%)	1 (12.5%)	1 (12.5%)	1 (12.5%)	4 (50.0%)
LA	0 (00.0%)	0 (00.0%)	5 (26.3%)	5 (26.3%)	8 (42.1%)
All JTE	1 (02.9%)	1 (02.9%)	8 (22.9%)	7 (20.0%)	16 (45.7%)

JTEs responses for whether or not they thought including the listening test on the NCT was a good idea were grouped into three areas: ‘Organizational Problems’, ‘Balance of Four Skills’ and ‘Improving Oral English’. ‘Organizational Problems’ were representative of comments such as: *I agree, but I feel uneasy about how it will be done because too many students take the test; and I doubt if it is possible to do a listening test in the same conditions all over the nation.* Under ‘Four Skills’ a comment was for example, *It is necessary to develop well-balanced four skills.* Under ‘Improving Oral English’ a comment includes, *More students will pay attention to oral English if a listening test is introduced.*

When the KTEs were asked how they felt about having the listening test on the CSAT they overwhelmingly supported the idea (90.6%, see Question 2). Unlike JTEs who did not separate speaking and listening skills and considered them under the category of ‘Oral English’, KTEs solely focused on improving listening skills. Therefore, in analyzing KTEs’ comments one of the categories that emerged was ‘Improvement of Listening Comprehension’. A Comment representative of this category was: *Without introducing the listening test, the students are not likely to pay much attention to the listening skill.* The other category that emerged is similar to the JTEs’ on ‘Improving Oral English’ and an example of these comments was as follows: *By including the listening test, you’ll make the students become more concerned about listening and speaking English.*

In Question 8, we asked if JTEs know that a listening test was already introduced into the nationwide university entrance examination in Korea. Table 14 shows that 40.0% of JTEs knew that Korea had a listening subtest. However, a majority (57.1%) had no idea that their counterparts in Korea had listening on the test. This point has some significance to the result above showing JTEs are worried about organizational problems that may occur from implementing a nationwide test. If they had more contact with KTEs, who are experiencing success in the administration of the test, JTEs’ worries about administering a nationwide test would diminish. Therefore, this result indicates that perhaps more constructive sharing of information between the two neighboring countries should take place in order to learn from each other to improve English education in their respective countries.

Table 14. JTE’s Knowledge on the Listening Test of CSAT in Korea

	Not at all	Not much	A little	Much	Very much
HA	5 (62.5%)	0 (00.0%)	0 (00.0%)	0 (00.0%)	2 (25.0%)
MA	3 (37.5%)	0 (00.0%)	1 (12.5%)	1 (12.5%)	3 (37.5%)
LA	12 (63.2%)	0 (00.0%)	0 (00.0%)	1 (05.3%)	6 (31.6%)
All JTE	20 (57.1%)	0 (00.0%)	1 (02.9%)	2 (05.7%)	11 (31.4%)

Summary

In this study we have presented the results from a questionnaire designed to explore what effects, if any, a listening subtest on a national university’s entrance examination has had on English teaching at the high school level in Japan. We have also looked at how the introduction of the CSAT has affected teaching in Korea and compared the results to JTEs responses. After analyzing the results, we conclude the following:

1. When teachers are faced with the reality or responsibility of preparing students for an entrance test, they alter their teaching. This creates some influences of the washback effect. This can be noted in the significant difference of responses from JTEs in the HA, MA and LA groups. The results of Questions 4 and 5 all show that the washback effect on the teaching of JTEs is progressively higher in the HA group compared with the MA and LA groups.
2. When there is a nationwide standardized entrance test, the washback effect is even stronger, and therefore it has more of an influence on planning and instruction. In the case of KTEs, a majority (96.9%) of teachers said they familiarize themselves with the contents of the listening tests. Moreover, 81% reported that they have changed their planning and instruction because of the influences of a listening test on the nationwide CSAT. In comparison to the results of JTEs, we can conclude that the CSAT has a more weighted influence on teaching than an entrance examination at a national university in Japan. This is especially significant because there is no listening test on the NCT.

3. Overall, the inclusion of the listening tests on a heavily weighted nationwide central examination offers opportunities for positive washback effects. Overall the responses of teachers were mostly positive when asked in Question 7 about the effects of including a listening subtest on a nationwide entrance test. Many JTEs commented that the inclusion of the test would be a means to bring a balance of language instruction in the high school curriculum. Consequently, many JTEs commented that it would allow more instruction on oral skills and thus the students' oral English abilities would improve. KTEs also responded in similar fashion by pointing out that it has allowed them to focus more on their students listening comprehension skills, and in turn their oral English or communication skills—in short, a positive washback effect.
4. A negative washback effect can be seen in teachers teaching to the test. The results of Question 6 show that a majority of teachers (75.0% of HA group and 87.6% of KTEs) use contents of past tests in their lesson plans. Teaching to the test may narrow the scope of teaching and learning.
5. Professional cooperation with other teachers in the region might be seen as a positive washback effect. In Question 8 a majority of JTEs had no idea that their counterparts in Korea had listening on the test. This point has a significant relationship to the results from Question 7 when many JTEs reported fears about organizational problems that may occur when trying to administer a nationwide test. Perhaps, if JTEs had more opportunities to exchange ideas with KTEs and could talk with them about their experiences of administering the test on a nationwide scale, then their worries would diminish.

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Web-CALL: An Authoring System for Implementing Web-Based CALL

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Abstract

We have developed a web-based authoring system called "Web-CALL." It consists of a Web-page Materials Production Unit (WMPU)" and a "Learning Support Unit (LSU)." These two units enable teachers without knowledge of HTML to produce web-page materials and allow students to study online English lessons, regardless of time and their location. We have implemented this system in CALL classes at our college. Score and survey results taken after such classes revealed that "Web-CALL" has worked well as a system for implementing Web-based CALL. The present system needs improvement to be a more user-friendly and effective and further investigation into the key effective factors in more advanced web-based CALL is also required via further classroom research and through discussion with other researchers. Although there is still room for improvement in "Web-CALL", it has the potential to be a leading tool in language teaching.

Web-based CALL

Recently, among the many CALL systems, web-based CALL seems to be the most popular. Many online English lessons are now available on WWW. They offer a variety of lessons such as reading comprehension, grammar and listening quizzes. Various technologies such as CGI, Java and JavaScript have made web-page materials more attractive to learners and more effective in language learning. A web-page has three characteristics that can be directly adapted into the CALL system. Firstly, it has versatility. It is available on the World Wide Web or on Local Area Networks. It needs no special software but can use browsers and so cost is low. Students are already accustomed to using browsers and do not need to know special commands which some CD-ROM software requires. Secondly, it has multimedia capability. It will accept movie, sound and picture files. Last, but not least, it has interactivity. Using CGI, Java and JavaScript, students get quick feedback from the server. For example, as soon as they finish online grammar quizzes, they get the scores or hints. Furthermore, teachers and students can interact via e-mail.

Development of a Web-based CALL system

The successful use of CALL largely depends, not only on studies on the effective use of CALL but also on the teacher-friendly tools. The widespread use of web-based CALL inevitably requires the development of authoring tools for creating interactive web-based exercises. We have been interested in developing a Web-based CALL system that enables teachers to produce online teaching materials and enables students to study English lessons online, regardless of time and location.

We started work on developing an authoring system, which we call "Web-CALL" in 1997. Figure 1 shows the homepage of "Web-CALL." The main purpose is to allow teachers to produce web-based materials without difficulty and to provide students with online English lessons. In designing the system, we regard creating a

student-centered environment as the most important consideration. One of the merits of CALL is that students can learn at their own pace. Consequently, the system design needs to be quite complex to accomplish this.



Figure 1. “Web-CALL” homepage

Construction of Web-CALL

"Web-CALL" consists of two units, the "Web-page Materials Production Unit (WMPU)" and the "Learning Support Unit (LSU)" as shown in Figure 2.

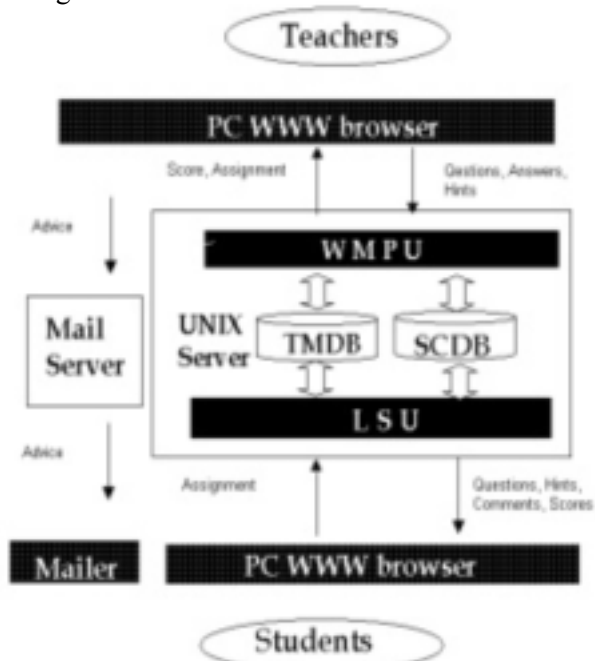


Figure 2. Construction of “Web-CALL” system

WMPU is authoring software. It enables teachers to produce new teaching materials and modify existing teaching materials. Teachers used to spend many hours, making web-page materials using HTML, but with WMPU, they don't need to know any computer program or HTML. All they have to do is to input text data with WWW

browsers. This software allows teachers to incorporate not only text, but also sound, picture and movie files. It is possible to incorporate on-line reading, writing and listening exercises.

Teachers start WMPU using WWW browsers. They input text data such as questions, answers, hints and comments, then register the data in the "Teaching Materials Database, TMDB.

Students access LSU via a WWW browser and try multiple-choice questions, referring to hints shown on the browser if necessary. They can study at their own pace regardless of time and location. Multimedia files shown on the browsers help them to understand the lessons. After students have answered the questions or sent their assignments, LSU receives the data and collates it with the correct answers. LSU then records the score results into the "Score Database," SCDB. Students can receive their marks immediately after they have finished the lesson. Teachers can browse each student's answer sheet from SCDB or check whether students have submitted their assignments. Moreover, if necessary, teachers can send an e-mail message directly from the assignment tables to the students.

The data stored in the TMDB and SCDB is read by CGI written with Perl. It is displayed on WWW browsers. We use UNIX as the server for the "Web-CALL" system and WWW browsers as clients.

Figure 3 shows the initial setting window of WMPU. Teachers first select the type of the materials. Then they input the title and directory name. Next, they set the number of questions. They can choose whether hints and comments are necessary or not.

Figure 4 shows a window used for making questions. Teachers can produce teaching materials by filling in windows and check a correct answer. They can add hints and comments to the materials. In this way teachers can produce teaching materials easily and quickly.



Figure 3. The initial setting window of WMPU

A sample LSU window is shown in Figure 5. The questions appear in the upper-left frame. When students click the hint button, hints appear in the upper-right frame. When they have finished answering questions, they push the CHECK button. The score result is then displayed in the lower frame. Students can answer the question again if they get a wrong answer. They can refer to the hints and comments if necessary.

Teachers can browse students' answer sheets (Figure 6). WMPU also shows the percentage of correct answers graphically (Figure 7). These features are very helpful for teachers in error and question analysis.

Thanks to WMPU, teachers can save time in producing web-page materials and the data stored in the server can be modified easily. The feedback we get from the students is helpful in error analysis and question analysis.

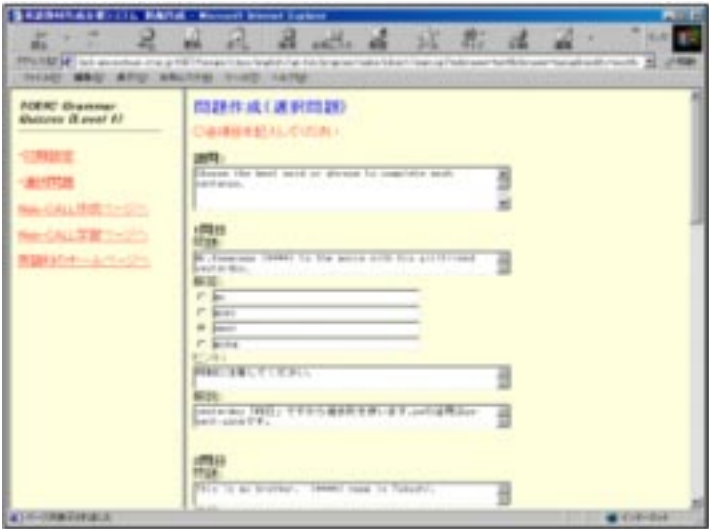


Figure 4. A window for making questions



Figure 5. A sample LSU window

Grade	Student ID	Name	Score	%	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
2	23001	hantani	2/10	20%	6/16	7/27	X	X	X	X	X	X	X	X
2	23001	asai makoto	8/10	80%	6/16	10/40	O	O	O	O	X	O	O	O
2	23001	hantani	7/10	70%	6/16	10/40	X	O	O	O	O	X	O	O
2	23010	tsukasa haruka	6/10	60%	6/16	12/40	X	O	O	O	O	O	O	O
2	23001	asai makoto	9/10	90%	6/16	12/41	O	O	O	O	X	O	O	O
2	23002	tsukasa haruka	6/10	60%	6/16	12/41	X	X	X	O	O	O	O	O
2	23001	asai makoto	9/10	90%	6/16	12/41	O	O	O	O	O	X	O	O
2	23001	asai makoto	10/10	100%	6/16	12/41	O	O	O	O	O	O	O	O
2	23012	tsukasa haruka	5/10	50%	6/16	12/41	X	X	X	X	X	X	X	X

Figure 6. Students' answer sheet (1)

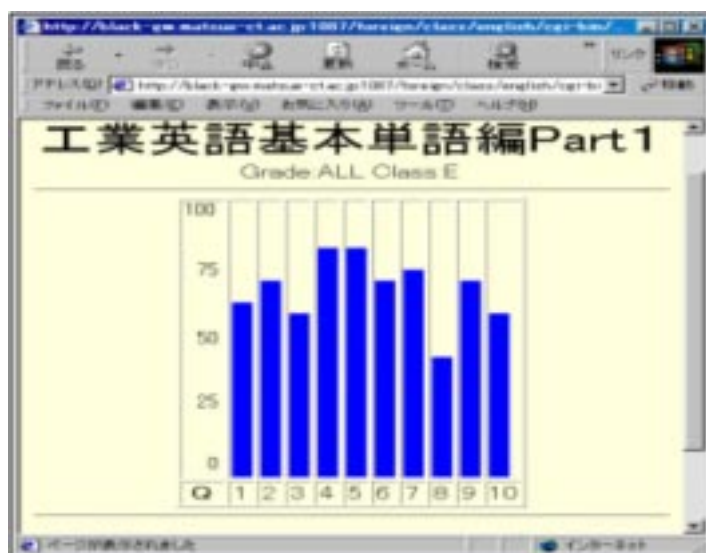


Figure 6. Students' answer sheet (2)

Evaluation of Web-CALL

English teachers at our college have tested this system in their classes. The test lesson the students took was a “Reading comprehension” exercise produced by the teachers themselves. Seven class hours were allotted to this project. To evaluate the “Web-CALL” lesson, the teachers compared the “Web-CALL” class with a normal, traditional, teacher-oriented class. After the “Web-CALL” classes and the normal classes were completed, all students took a test which consisted of four types of questions; Comprehension check, Grammar A (multiple-choice), Grammar B (translation) and Grammar C (put in order). We could assume that the scores for both the evaluation and the control classes (i.e. the classes taught with conventional teaching methods) should be nearly equal. This assumption was made because the classes were divided into two groups of equal capability based on test scores in previous achievement tests. The score results are shown in Table 1. On the basis of average score, the CALL class did better than the normal class in Comprehension and Grammar C. “Web-CALL” is designed to provide students with a student-centered language-learning environment. In “Web-CALL” classes, students can study at their own pace.

Table 1. The Score Results

Types of Questions	CALL Class (N=84)		Normal Class (N=42)	
	Average	SD	Average	SD
Comprehension	80.0	15.7	77.1	10.6
Grammar A	82.8	22.0	89.0	19.4
Grammar B	79.3	27.3	81.0	26.7
Total	76.9	14.2	76.5	11.5

The better results in Comprehension suggest that the system has worked well. During the CALL class, teachers walked around the class, and helped the students as required. They had time to talk to each student. Superiority in Grammar C means that the students could order words better on computers. Average Grammar A results were significantly lower in Web-CALL classes compared with normal classes and the average translation scores were slightly lower. This seems to have been due to design deficiencies in the computerized materials.

Surveys were taken after the CALL class. The questions were as follows:

- Q1: Do you like English?
- Q2: Do you like to use computers?
- Q3: Did you enjoy Web-CALL class?
- Q4: Did you study positively in CALL class?
- Q5: Do you think Web-CALL classes are effective?
- Q6: Do you like to take more Web-CALL classes?
- Q7: Do you want to do Web-CALL lessons in your free time?

The results of the survey (Figure 8) revealed that 60% students enjoyed "Web-CALL" classes, 67% students studied positively, and 70% students found "Web-CALL" classes effective in language learning. Overall, students found "Web-CALL" classes interesting and useful.

We evaluated the "LSU" interface by asking 80 students to complete questionnaires. The questions were "What did you think of..."

- Q1: the menu layout?
- Q2: the layout of the question frame?
- Q3: the operation of the question frame?

The results in Figure 9 show that there is still room for improvement in the layout of the question screen and in the operation of the question frame.

Future Work

We need to carry out further investigation into the key effective factors in more advanced web-based CALL to advance our project. We plan to further examine classroom research and consult other researchers actively engaged in CALL teaching and development. Results from this research can then be used to improve the effectiveness of our present "Web-CALL" system.

Conclusion

In Japan, most English classes have 40 students, which makes student-centered language learning quite difficult. Although there is still room for improvement in the "Web-CALL" system, it can be an effective tool for overcoming the problem of class size. It seems that the system is successful in shifting the focus from a teacher-centered classroom environment to a student-centered, independent, language-learning environment where teachers are more available for individual assistance. Students are not afraid of making mistakes during the lessons, which is said to be one of the key factors in students being unable to express their opinions in front of other students. Computers don't ridicule, they just give appropriate hints or advice.

Of course computers cannot take the place of teachers, who should take the initiative in classes. It is very important for teachers to realize the ways in which CALL can be more useful than other teaching methods. "Web-CALL" is expected to be effective in task-based learning. CALL is directly relevant to all kinds of language education, at all levels. Successful development of an effective system in Japan could help spread CALL. "Web-CALL" has the potential to be a leading tool in implementing Web-based CALL.

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Online Resources

- Jun's English Lab <<http://black-gw.matsue-ct.ac.jp:1087/foreign/iwata/>> This site contains some information about Web-CALL Project.
- Online English Seminar <<http://black-gw.matsue-ct.ac.jp:1087/foreign/common/seminar.htm>> This site contains some online English lessons including "Web-CALL.
- Web-CALL <<http://black-gw.matsue-ct.ac.jp:1087/foreign/class/english/cgi-bin/check.cgi>> This site needs user name and password. Please contact iwata@gs.matsue-ct.ac.jp

Web-Coursed Contexts Delivered by the CLIM Between On-Line and Conventional Modes

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Abstract

English is taught as a foreign language in Taiwan. It is especially important for the cadets of Chinese Air Force Academy (CAFA). Air Force is a high technical service, so it requires the soldiers to be scientific and intelligent. Our nation replaces the old planes and buys new planes such as the Image 21 and powerful fighter-planes. Furthermore, our cadets are responsible for the duty of protecting our country. Therefore, I think that I endeavor to create a supportive learning environment. Using recent developments in information technology, I try to use the Computer Language Instruction Model to give more effective teaching and help my cadets to improve their learning English skill. Furthermore, I wish the treatment to enhance their comprehension in English learning. In addition, the Internet-based environment also provides a variety of tools and methods to help evaluate the learning process and assess cadets' ability. Afterwards, the CLIM is like knowledge treasure including multimedia and hypermedia; furthermore, it contains valuable resources under the World Wide Web. I teach the cadets how to use them and create the domain of knowledge. So it needs an effective tool to direct the cadets to explore and apply them. This paper attempts to highlight some significant applications and evaluation issues on network instruction. And the goal is to provide suggestions to improve the teaching.

At the same time, this study is to investigate what's the difference with the treatment delivered by the on-line through the CLIM and without the computer courseware in the conventional modes. Hence 66 cadets divided into two groups with the half to be the experimental group; vice versa, the rest to be control group. According to the pilot study, after a semester of regular training and practice in the Computer Language Instruction Model, the experimental group is superior to the control group in English skills through the statistical analysis and data/questionnaires analysis or observation.

The Computer Language Instruction Model (CLIM) is an accessible, convenient Web English course and easy to use (the web site: 163.15.25.231). The CLIM is an open system for the evaluation of Web Enhanced Learning (WEL) and Web Enhance Instruction (WEI). The CLIM included the teaching and learning procedure in the Appendix. The interactive courseware demonstrated in a real class can be used as classroom material rather than supplementary material. Developing the CALL use, the researcher could either take the perspective of the learner as communicator or the learner as manipulator (Chapelle, 1997). This is primary creation. The cadets were trained by the CLIM; they performed the second language acquisition and foreign language learning as communicator as the similar to those of L2 classroom.

Data collected from the questionnaires, pre-test on language acquisition and post-test on network instruction, interviews and classroom observations show that the cadets have positive attitudes toward the Computer Language Instruction Model (CLIM) through the World Wide Web (WWW). This paper attempts to highlight some significant applications and evaluation issues on network instruction. And the goal is to provide suggestions to improve the teaching. Hopefully, this innovative model will be advocated and integrated into English instruction in the future.

Introduction

The aim of this study is to investigate the improvement of the cadets' English ability via the language instruction site created for this study and related sites on the Internet in an EFL (English as a foreign language) classroom as well as to increase the cadets' achievement scores and language learning attitude in the process of language acquisition. The cadets' using the Internet as well as interacting between teacher and machine are the discussion and analysis based on classroom data collected by the writer. It briefly states the limitations of the observations and teaching procedures made in this study and proposes implications for improving classroom teaching on the World Wide Web (WWW). The results of this study will provide English teachers with a reference for future designs on the English curriculum incorporating the Internet materials; at the same time, I hopefully provide the findings to create new ideas for the conventional teaching and learning.

English is taught as a foreign language in Taiwan. It is especially important for the cadets of the Chinese Air Force Academy (CAFA). The Air Force is a high-tech service, so it requires its members to be not only intelligent but also scientific. Our nation is replacing old planes with new ones such as the Image 21 and other powerful fighter planes. The technical directions for the planes are completely written in English, such as those computer commands on the operation console. So, the cadets should own more English abilities to conduct the flight mission. Therefore, it is essential to create a supportive learning environment for them. I try to use language instruction on the Internet for more effective teaching and to help my cadets improve their language abilities. In addition, the Internet-based environment also provides a variety of tools and methods to help evaluate the learning process and assess cadets' abilities. Moreover, language instruction on the World Wide Web (WWW) is a learning treasure, which includes multimedia and hypermedia and other valuable resources. Especially, the multimedia and hypermedia are built through the Internet to integrate these four language skills—listening, speaking, reading and writing—in English instruction. That is to say, English teachers and students must grasp the gist that “the four language skills are interlocked and interdependent” (Robinett, 1983, p.173). In recent years, some studies have been done on the potential for English learning and teaching through web technology (Green, 1997; Sloane, 1997; Wei, 1997) which has attracted attention and interest of numerous computer users and teachers worldwide for learning English. I teach the cadets how to use them and create their own learning domain. So there is need for an effective tool to direct the cadets to explore and apply these treasures. This paper attempts to highlight some significant applications and evaluation issues on language instruction. And the goal is to provide suggestions to improve teaching.

However, current research has not provided sufficient evidence on whether student interests in learning English increase through the help of web technology or online materials. In order to improve students' motivation and make learning more effective, I shall integrate the Internet into English instruction. The purpose of this article is to find out (1) Are the effects of language acquisition on the test group significantly different in influencing cadets in developing English reading and writing abilities? (2) Are the reading and writing abilities of the cadets in the test group significantly influenced by the Computer Language Instruction Model (CLIM)? (3) Will student-student and teacher-student interaction be significantly improved by using the Internet?

This study provides empirical evidence on the positive correlation between the cadets' attitude and the use of the Internet as a teaching tool. The results of this study will provide teachers with a reference for the future English designs incorporating the Internet English materials and hopefully compensating for the disadvantages of the conventional teaching.

Methodology

Background of the study and Subjects

Generally, the language proficiency of the majority of CAFA cadets is at the beginning level. I chose four sophomore classes, a total of 88 cadets, to train in the Computer Language Instruction Model (CLIM). Those

subjects were divided into two groups: one group of 44 cadets represent the experiment group; the other 44 cadets represent the control group.

The purpose of the present study is to enhance the reading and writing abilities of the cadets. To take control of the cadets' enhancement of the reading and writing abilities, I chose the ECL test which is held on the beginning of this semester by the authority of CAFA as their baseline of placement for their starting proficiency. When they graduate from the CAFA, they can have the opportunity to go abroad for the training of the maintenance and flight in the military or company in U.S.A. However, the examinees are required to pass the ECL test given by the American Institute in Taiwan. Even though the students have basic computer skills, they have to take extra basic computer and Internet training for eight hours.

Settings

The teaching activities for the experiment group are held in a language lab or a computer lab which is equipped with ninety Pentium II computers. The instructor taught the experiment group two hours per week during the spring semester in 1999. The control group stayed in a conventional classroom or a language lab for their studies. Outside the lab are computers available for the cadets to work on their projects or assignments in their free time. Moreover, many cadets of the G2 have personal computers with network connections. They can work on their projects either individually or in pairs. However, the teaching activities for the control group are held only in the language lab and in conventional classrooms.

Instrumentation

These data were collected by using questionnaires, surveys, observations, and student records and comparisons between the experiments and the control groups with open-ended questions about the network teaching via the Internet. These questionnaires—"Language Learning Inventory" (Oxford, 1990a), "Attitudes toward English Instruction" (Corbiy, 1979; Bushyager, 1981; Xenanko, 1996; Jacobs, 1996) and "Strategy Inventory for Language Learning (SILL)" (Oxford, 1986b)—consisted of six parts: cognitive, memory, compensation, metacognitive, affective and social strategies to integrate overall skills for learning language. Furthermore, the survey in Appendix I was adapted to help the cadets answer the questions in it. The new survey was given to the two groups to compare the difference of their perceived attitudes and interest toward network English instruction before and after the experiment. The main approach of the experiment in this study was to integrate the

World Wide Web information into English instruction in the experiment group, but maintain the original and traditional approach to teaching in a classroom in the control group. Another the questionnaire—"Computer Language Instruction Model" in Appendix II—consisted of thirty items on a 3-point preference-scale with three being the highest score to measure samples' general attitudes and interest toward English instruction. Additionally, the open-ended questions in Appendix III consisted of ten items for the researcher to understand students' feelings and opinions toward English instruction through the World Wide Web after this experiment was conducted in the experiment group. Classroom observations with the teaching in the experiment group were also included.

The cadets were assigned to an experimental group and a control group. The post-test was to measure cadets' achievement, using a checklist. Process efficiency was operationally defined as a measure of the efficiency of the process of learning in terms of learner note-taking strategies employed in learning. Learners' records in their learning process were collected immediately following treatment, photocopied for the examination of learning process in terms of quantity of notes taken, and returned to the subject for studying purposes. These measures of English ability were used to compare the two groups of cadets: the cadets' course grades, their scores on the departmental final examination and their acceptable-answer scores on a cloze test. The t-test and discriminant analyses of these measures indicated that the experimental group is significantly better ($p < .05$) than the control group on all theses measures in this semester. Probable causes of this phenomenon were discussed, as well as a possible relationship between this "new" variable and previous discouraging learning-gain (pre-test/ post-test) findings.

Course Design: Computer Language Instruction Model (CLIM) and Resources

Two primary tools are used for this study: Computer Language Instruction Model (CLIM) and navigational tools (Netscape Communicator and Internet Explorer). Through CLIM, students exchanged ideas with peers and the instructor, and sent in homework as well. This created an opportunity for students to communicate in English (Savignon, 1983). In addition, two of the most popular navigational tools, Netscape Communicator and Internet Explorer, were used as browsing tools for cadets to access the web sites.

The material used network to examine the cadets' reading ability. First, the classmates browsed the authentic text of *American Language Course* that I keyed in and converted to the "html" format before uploading it to my web site ([http:// 163.15.25.231](http://163.15.25.231)). In order to decrease their anxiety and save time as well as to acquire good control over the Internet, cadets had been introduced to the different types of network instruction feedback which would allow them to keep track of their own learning process or review the front page on the hints. As with human communication (Robinson, 1991), network instruction may depend on factors related to the learner, e.g. learner perceptual processes, individual readiness and experience, and factors related to the feedback itself.

Furthermore, when cadets did not understand an expression or know the pronunciation of a word or phrase, they could link to on-line teaching resource with the net address which I collected, e.g. the Webster Dictionary, Encyclopedia, Merriam Dictionary and the Internet Thesaurus. Moreover, I set up useful web sites in the lab computers to make other search engines accessible. These are several pedagogical criteria for evaluating World Wide Web sites designed for computer instruction.

According to Jeff Nelson (1986), the ideal ESL web site should be:

1. Interactive—Students can give input and the program utilizes that input; that is, students effect the machine.
2. Communicative—Students send or receive messages from real people.
3. Contextual—The site has a context or theme for the language which is presented.
4. Sensor—Information is presented in multiple formats—textual and visual.

Based on these pedagogical criteria, teachers can choose ideal Web sites which may help upgrade learners' proficiency in using the target language more effectively and appropriately.

Makulowsich (1994) offered some suggestions on how to teach the Internet, including introduction to the Internet, matching objectives to cadets' interests, the importance of interactive sessions, conducting cadets' evaluation, follow-up, keeping up with cadets, and renewal of teaching materials and teaching skills. These tips provided guidance for the instructor in selecting teaching materials through the Internet.

Therefore, the instructor selected some web sites from the World Wide Web (WWW) among the abundant Internet resources (Kitao, 1997; Leu & Len, 1997; Sperling, 1997) for English learning for this study based on these criteria. Sources available in the web site included the following:

1. The "Bulletin Board" and the "News Sheet" which were created with the goal of increasing cadets' communicative ability. A medium such as computer-mediated conferencing can support two-way or multi-way dialogues very well.
2. The Encyclopedia and the Webster and Merriam Dictionary can be transferred to interactive multimedia in the form of multiply-linked teaching resources. The design is more successful in making the cadets active learners.
3. The International Community Radio in Taipei (ICRT) site was made available since it is one of the most popular radio stations and the only English radio station in Taiwan, which is easily

accessed through the Web. Many cadets were already familiar with the radio programs and they are related to their real life experience which can promote their learning interests.

4. Yahoo or Infoseek were incorporated since cadets already had basic computer skills and were easily trained to search for information and improve their independent reading ability.
5. EFL/ESL web sites must be clear and immediate applications to foreign-language teaching. Accordingly, students can learn English independently through EFL/ESL web sites in the future.

Data Collection and Analysis

All the data for this study were collected before and after the experiment was conducted. The same survey was given at the beginning and the end of the spring semester in 1999. Those questions included a list of thirty items as shown to sample the cadets' interests and attitudes toward English learning in Appendix I. And the survey in Appendix II consisted of two parts—the evaluation after learning the Computer Language Instruction Model and the evaluation of network course—to sample whether the cadets enhance their abilities after the CLIM's learning. And the open-ended questions were used to sample cadets' attitudes and opinions toward English instruction through the World Wide Web (WWW). All participants understood their participation in this research to be confidential, and their responses to the survey to be used only for academic purposes during data collection procedure. They were not asked to write their names or identification numbers on the questionnaire.

The information obtained by the questionnaires was coded in the SPSS for WINDOWS data sheet and then the t-test for pre and post-test analysis was conducted. The t-test was used in the significant differences at the level of .05 in the effects between the experimental and the control groups. The statistical procedures used for data analysis were based on the research questions, which were related to the cadets' interests and attitudes toward English instruction. Moreover, the supplemental information gained from the open-ended questions complemented the explanation of the survey results.

Limitation of the Study

The subjects for this study were my cadets at the Chinese Air Force Academy. It would therefore be difficult to generalize the results of the study to the students in universities because the special environment in the military academy is different than that of universities. Furthermore, because of time constraint in using the computer lab, the on-line chat room was not designed in the course schedule of this study. Sometimes, the web activities were not keeping on the status because this study was limited by the equipment's speed and capacity. These factors resulted in the limitation of the study.

Results

The outcome collected in this study was categorized into two categories including the analysis of t-test; multiple regression on the responses of the courseware as well as the scores of the post-test.

The information obtained by the tests on these materials was encoded into the *SPSS for WINDOWS 8.0* data sheet and then the t-test for this semester was conducted. The analysis was used to examine the differences between the two groups. The significant level was set at .05. In pre-tests, as previously mentioned, students' scores and language acquisition are not that different; in a word, their language proficiency was similar in terms of academic record and learning pathway. Reading comprehension scores from the *American Language Course* (ALC) were obtained from school records for all subjects. Examination of the mean scores, as well as the t-test for independent samples ($p < .05$) indicated that the groups differed in reading comprehension at the end of the school year (see Table 1). However, the experimental group had been training with the Computer Language Instruction Model during this semester; their scores kept on making more progress than the control group's during the school year, as

Table 1. The Results of T-test for the Control and Experimental Groups

Weeks in the school schedule	t-test for Equality of Means			
	T	df	Sig. (2-tailed)	Mean Difference
Pre-test	0.46	64	0.651	0.15
Week Four	-1.56	64	0.12	-3.88
Week Nine	-2.96	64	0.00*	-9.94
Week Thirteen	-1.12	64	0.27	-3.12
Seventeenth	-4.13	64	0.00*	-9.91
Post-test	-3.72	64	0.00*	-8.45

*p < .05

shown in Table 1. During the school year, the English Comprehension Level (ECL) examination, which was given during the pre-test and post-test, was administered to all students, including the students in the pilot study. To compare the reading comprehension scores, a t-test for independent samples was again used, which was held during the fourth, ninth, thirteenth and seventeenth week for the two groups. Results showed that the original hypothesis, that the experimental control who had been using the Computer Language Instruction Model would exhibit greater reading comprehension than the control group who did not use the Internet, was supported.

According to the results, the students across the CLIM pedagogy were engaged in the web-course reading of textual information from the HTML on the web site—163.15.25.231. The method of the CLIM pedagogy and its ability to effect positively the tests taken by the experimental group. The students had ample time to browse through the linkage under the heading, “Teaching and Learning Resources,” from the homepage through the Computer Language Instruction Model. Through training by the Computer Language Instruction Model, the experimental group upgraded their language learning from a passive into an active learning mode. They used the Internet learning resources more and showed more cooperation in peer correction. In general, they were motivated to learn English using the Internet. The students, in such a situation could easily access a greater concentration of material on language acquisition because of the vast learning resources.

There was no significant difference between the control and the experiment group for the pre-test in terms of their English ability. There were some items showing significant differences between the two groups after the English instruction via the Computer Language Instruction Model on the World Wide Web. Those items are described in Table 2.

Table 2 indicates that the data was processed by the multiple regression method of the SPSS to show the correlation between two parts of the questionnaire of Appendix 2 and the scores of the post-test of the CLIM’s training course. In addition, the researcher divided the thirty items of Part One in Appendix 2 into five categories, including cognitive (items 1 to 6), affective (items 7 to 12), social (items 13 to 18) reading (items 19 to 24), and monitoring (items 25 to 30) strategies. Afterwards, the survey investigated the evaluations of the courseware in part two of Appendix 2.

At the same time, the researcher divided the questions into five categories: operation interface, software evaluation, content appropriateness, feedback design and system function. After the investigating research at the end of the semester, the researcher integrated these different opinions so as to compare them with the last test—the post-test. Furthermore, the researcher again looked for correlation between the scores and the questionnaire.

From this table, the questionnaires of Appendix 2 which included questions on the English class using the Computer Language Instruction Model and the evaluations of the web-based course, were associated with the dependent variable scores of the post-test. From the regression, the questionnaires of Appendix II supported the

research questions; reading and writing skills were influenced by the Computer Language Instruction Model. The table indicates the significance of the training methods used for the experimental group. This significance is shown in learned abilities involving cognitive, reading and monitoring strategies in the English class using the Computer Language Instruction Model. The cognitive strategy was commonly used and proved significant in the Computer Language Instruction Model. In addition, the reading strategy proved significant in the web-based course; so the students' English abilities were in fact enhanced. The monitoring strategy also made a significant difference in the Computer Language Instruction Model. The students used the monitoring strategy more, their scores gradually made progress and their English improved. Furthermore, the evaluation of the courseware in part two of Appendix 2 was significantly different from the others. The table shows the content appropriateness, which allowed the experimental group to significantly outperform the control group on the post-test. The students learning pathway followed the flow chart of teaching and learning material in the Computer Language Instruction Model. Thus, it was important that the teachers prepared the material before starting to teach a lesson. The students could easily motivate themselves to learn the Computer Language Instruction Model. Strictly speaking, using the framework of the Computer Language Instruction Model meant that the students had to accept responsibility. The teacher was to fulfill only a supporting and guiding role. Therefore, the experimental group did outperform the control group. The students thought the system's functions displayed appropriateness and the courseware helped them individually adapt to their learning experience. The system provided the opportunity for real practice and adaptive teaching material without the boundaries of time and space.

Table 2. Multiple Regression: Effects of Factors of English Instruction, Courseware and the Scores of the Post-test

	Beta	t value	Significance
Cognitive Strategies	0.50	3.11	0.01*
Affective Strategies	-2.04	-1.03	0.31
Social Strategies	-0.22	-1.52	0.14
Reading Strategies	0.53	3.73	0.00*
Monitoring Strategies	0.59	3.85	0.00*
Operation Interface	-0.15	-0.84	0.41
Software Evaluation	-0.24	-1.35	0.19
Content Appropriateness	0.60	3.97	0.00*
Feedback Design	-0.12	-0.58	0.57
System Function	0.49	2.62	0.02*

*p < .05

Notes: 1. Independent Variables: Items in the questionnaires as shown in Appendix 2 (Part I and Part II).
2. Dependent Variable: the scores of the experimental group on the post-test.

Responses of Open-ended Questions

Generally speaking, cadets from the experiment group were satisfied with the teaching materials from the Computer Language Instruction Model such as cloze tests, the usage of a dictionary, idioms and slangs which attracted their attention more than other texts and materials. They thought that online materials were more practical and useful to their daily life, and that they were authentic. In addition, cadets thought that online materials could improve their English reading skills significantly. Moreover, there was the perception that "Bulletin Board" could enhance teacher-cadet, cadet-cadet interaction, and cadets really enjoyed discussing and expressing some

thoughts through the board. Furthermore, they post their interaction on the “News Sheet” to share with the peers and teacher together. According to the G1 cadets’ opinions, they thought that the WWW applied in the English course would be appropriate; furthermore, they agreed that it will be necessary to offer another two-hour-period class of the English instruction through the Computer Language Instruction Model besides their regular two-hour English class. Meanwhile, students hoped that this course could be optimal for anyone who expressed interest. However G1 cadets believed that the learning resources from the World Wide Web were tremendous; they did not feel free to use the equipment on campus because of the weakness of the settings. Most students did not spend extra time using the Internet outside the English class; they only searched for some English resources through the Computer Language Instruction Model in class because they could not find the appropriate equipment otherwise. There is only one-computer lab open for the cadets, and it is frequently occupied. In addition, not every cadet owns a personal computer either in the dormitory or at home. They could not use the computer as much as they wished. When using the computer on campus, cadets often felt frustrated because of the slow speed of transmission. Furthermore, because the campus computers were not equipped with audio systems, cadets felt bored sometimes. Without audio capabilities, the enhancement of interaction between the computers and cadets in listening and speaking was limited.

Conclusion

The purpose of this study was to investigate the cadets’ attitudes and opinions toward the English instruction through Computer Language Instruction Model on the Internet to find out whether cadets were interested in learning English through the Internet, whether the cadet-cadet and teacher-cadet interactions were improved, and whether their perception of communicative ability was enhanced. The data for this study was collected through pre- and post-surveys, e-mail feedback, open-ended questions and classroom observations from two groups of students, the experiment group and the control group. The following discussions of the cadets’ attitudes and interests are toward online materials and English learning via the interactive function of the Internet. Also, some suggestions to English teachers are provided.

In sum, cadets involving the Computer Language Instruction Model (CLIM) through the World Wide Web showed positive attitudes toward language learning, and had more opportunities to interact and communicate with each other. E-mail provided cadets with in-class and out-of-class discussion and reduced their anxiety in front of the screen. Whether the lab equipment could be improved and technical problems eliminated and whether the instructor could get to know more about the cadets’ interest and needs when selecting the online materials, use of the Internet will effectively facilitate learning. It is hoped that the results of this study will provide some perspective views of teaching English for the reference of English teachers. There is not only one wholly effective learning teaching approach. Instead of using only one approach or method, most successful English teachers use an eclectic approach, or a combination of several approaches which they have found from their past experiences to be most effective in promoting language learning for their cadets. Another important goal of my research is to provide hypertext constructs with open hypermedia system. I propose an open hypermedia system framework to classify and evaluate the hypermedia system and integration on the World Wide Web. In the future, the World Wide Web seems to be the major interface and development environment and all users will have access to it through the Internet. I have adopted the World Wide Web as the backbone of the system architecture to combine the features of both the World Wide Web and the hypermedia system and to enhance the users’ convenience. Those features include integration, distribution, across platforms, collaboration to enable us to adopt merits of both the World Wide Web and the open hypermedia systems (Chiu, 1997.)

Data gathered in this study included a wide range of formative evaluation and participant-observer accounts in the form of personal note, meeting notes, interviews, questionnaires and e-mail messages. The achievement measures for all treatment groups showed significantly higher levels of achievement when compared to the appended control group. Using the t-test analyses of variance, the data is examined to determine what effect, whether any, the varying instructional strategies have on learning. Results indicate that there were statistically significant

differences between any of the experimental groups. The significant effects were found in this study; results indicate further research will prove worthwhile in determining effects of instructional strategies on emerging technology-based instruction with designers' intelligence.

The possibility of replacing mainstream teaching and lectures by the use of the Internet has a number of implications for universities. According to Dr. Chuang's article, the four language skills can be enhanced in the English Instruction via the Internet (Chuang, 1998). I have demonstrated, using a sophomore English course, how to make the transition from traditional teaching to lifelong learning. In particular, incremental construction makes the transition affordable, while at least maintaining the student learning experience, and perhaps improving it. I hope my experience encourages others to try using hypermedia technology as a central part of the cadets' learning experiences, rather than the peripheral role that it often plays today. Being an English teacher, I believe that incorporating the Internet and multimedia into the integration of four skills (listening, speaking, reading, writing) in English instruction would be more effective and should be advocated (Chuang, 1998). In addition, I hope that the outcomes and suggestions of this study will be beneficial in the future curriculum design of English instruction.

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What Spiders Forgot to Weave on the Web: Synchronous Text-Based Environments for Language Learning

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Abstract

Although the WWW played an important role in popularizing the use of the Internet among ordinary users, some of the truly synchronous text-based services have been overlooked because of the WWW's popularity. While these services can not be functionally incorporated into WWW structure for some technical reasons, they supplement the WWW with various benefits. After quickly reviewing different kinds of such services, their strengths and weaknesses are compared, along with some educational considerations and precautions to be made in using them in the classroom.

Impact of WWW

The WWW has played an important role in popularizing the Internet with its ease of navigation, integration of various types of information, and magnitude of stored information. Even a novice user can obtain various types of information in a multimedia format within several clicks after a few minutes of practice with a WWW browser.

On the other hand, its impact and popularity have gone so far that many people have developed misconceptions about it. Not a few people appear to believe the WWW is equal to the Internet. Even better informed users sometimes prefer more powerful WWW browsers so everything might be available within the window of the browser. Unrealistic expectations of the WWW have resulted in oversized WWW browsers and reduced compatibility, as software companies try to incorporate every imaginable function into one product.

What Is Neglected...

The producers of WWW browsers have done a great job and seamlessly incorporated so many features such as, email, gopher, ftp, and usenet into a single browser. What is neglected here, however, is most of the truly synchronous services based on fulltime telnet connections.

It is not so much that they are neglected, but rather that they are technically difficult to incorporate within the scheme of the http protocol, with which the WWW functions.

What Goes on Behind the Web

When a user tries to access information on the WWW, the browser software establishes a connection to the target server, and sends a simple request command to retrieve the data that the user wants. The server then sends back what it has, or else an error message, to the user, and terminates the connection with the user.

This is why the WWW is not capable of fully synchronous communication over the net, which requires stable connections designated to each user.

Proxy servers function as a middleman. They stand between the user and the target server, listen to the user requests, pass on the requests to the server, which in most cases sits outside the protected network firewall, and then pass on the responses from the server to the user. This proxy or firewall can sometimes be a barrier for synchronous communication services.

Some readers may have experienced difficulty when they tried to use services that require stable connections such as CU-SeeMe, RealAudio, RealVideo, etc. The same difficulty applies to more traditional text-based services such as IRC, ICQ, MOO, etc.

Examples of Synchronous Text-based Services

Here, let us review examples of synchronous services, particularly text-based ones. Even users with very limited Internet connections can use text-based services free of frustration from slow connections.

Talk

A traditional feature of UNIX but now rarely used. Users on UNIX can talk with each other on the screen, where two separate areas are available for input and output. The communication is limited to a one-to-one basis. The figure shows two windows of distant users in a single screen for the convenience of the readers.

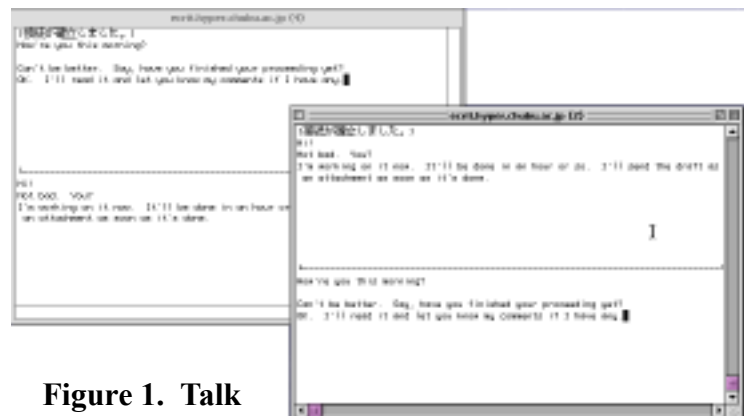


Figure 1. Talk

IRC

IRC is an expansion of the talk above, allowing simultaneous communication with more than two persons. There are different channels available with different interests and topics, and usually a huge number of participants. The kinds of channels vary from server to server, which provide the IRC service. IRC is much more sophisticated than UNIX talk with a fairly complicated set of commands. In terms of the quality of the language used, many acronyms are used in the conversations such as R for are, U for you, CU for see you, etc. Some channels are adult-oriented with sexually explicit



Figure 2. IRC

titles. They are listed in the channel list, which in consequence exposes students to experiences which might be regarded as inappropriate in an educational context.

ICQ

One of the most popular commercial messaging services, with features such as chat, paging, file transfer, etc. More useful if you already know other ICQ users than if you are looking for new friends. More than two persons can chat at the same time.

MUD/MOO

MOO or MUD is a text-based virtual reality environment. It is fully programmable, and has the notion of space which allows users to expand the environment to represent real life situations. It is capable of large group discussions as well as chat among a few people. The notion of space or locations is distinctive compared to other services.

WWW Chat

Similar to talk or IRC but no client software is necessary and it is very easy to use. Only basic authentication is available and it is relatively slow compared to other fully synchronous services. This is not an off-web service but is introduced here for comparisons with other similar off-web services. As is the case with IRC, there are various WWW chat sites of different topics, some of which are not be appropriate for young learners.

It is virtually impossible to introduce each of these services in full details now. The best way is to try them out yourselves. References to good introductory documents are in the reference section at the end.

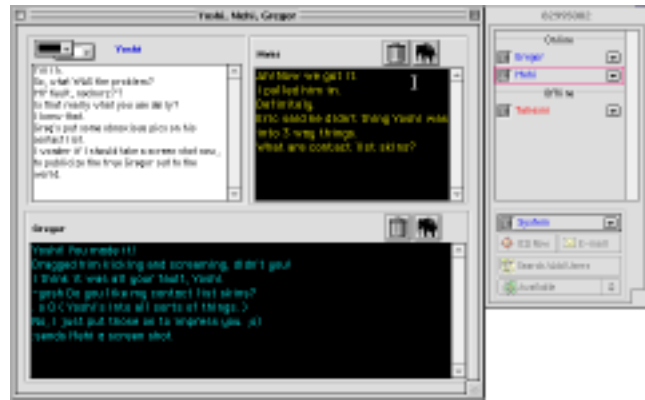


Figure 3. ICQ

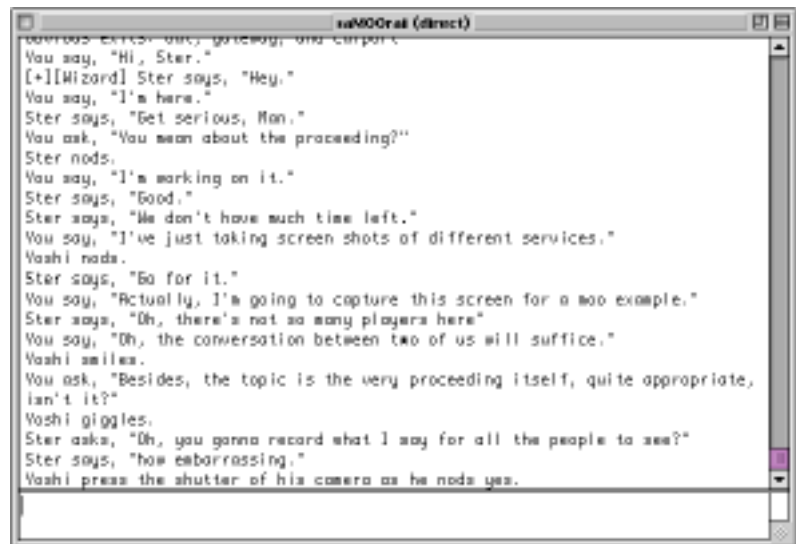


Figure 4. MOO



Figure 4. WWW Chat

Comparison of Synchronous Text-based Services

A brief comparison will be attempted here with regard to the criteria such as:

Client	if any extra software must be installed to use the service
Ease	if the service is easy enough for novice users
Speed	the speed of the message transfer and how the entire service operates
Security	if there is enough security for user identity
Safety	if the community and the contents are safe enough for students or minors to use
Expandability	if the environment is expandable by programming etc.
Stability	if the service is stable, free from network trouble etc.
Multilingual support	if the service supports multiple languages, especially non-Roman characters
WWW Affinity	if the service can be incorporated into WWW platform, sometimes with the help of other plug-in software or Java applets.

Table 1. Comparison of Synchronous Text-based Services

Criterion	Talk	IRC	ICQ	MOO	WWW chat
Client	-	++	++	+	--
Ease	-	+	+	+	++
Speed	++	++	++	++	-
Security	++	+	++	++	+
Safety	+	-	+	++	-
Expandability	--	+	--	++	--
Stability	++	+	+	+	-
Multilingual Support	-	+	+	-	++
WWW Affinity	--	--	--	+	++

Table 1 shows the comparison of services mentioned earlier. While IRC and ICQ are easy to use and speedy services with fair stability, MOO surpasses them in terms of security and expandability. Although WWW chat is not a truly synchronous service off the web, its ease of use, WWW affinity and multilingual support are beneficial for users at introductory levels.

Problems and Cautions for Classroom Use

Using synchronous services in the classroom can be rewarding but some precautions must be kept in mind to avoid chaos and undesirable situations.

Quality of the Society

Some services are so easy to join and open to the public that the quality of the community might not be suitable for educational purposes. This is not usually a problem if the service offers a good security feature and if the particular place is well maintained by a responsible staff.

Class size

Some services are intrinsically more suitable for small groups. Classes in Japan, for example, are relatively large and thus the instructors should take necessary measures to cope with this problem. Teachers can split students into smaller groups, or change the environment itself by programming, if it is possible.

Necessary software

Most synchronous services require specific software to be installed. You might need to talk to your local system administrator for cooperation and/or permission to do so. The software might not always be provided for free.

Firewall/Proxy Issue

Some services are not compatible with network firewalls and proxy servers. If you can not successfully use a service after sufficient reading of the manuals etc., maybe you should contact your local sysads for details. There can be ways to work around the firewall issues in some cases.

Cost of the Connection

One needs to be connected to the Internet for as long as he or she uses these synchronous services. In Japan the phone bill can be unconscionable if one gets too much addicted to the service.

Conclusion

In order to incorporate text-based synchronous communication services into their classes, teachers should consider different aspects of those services. Particularly important from the educational point of view are the ease, security, quality of the language used, and the appropriate topics. At the moment, the authors recommend MOO which appears to be the safest service with sufficient features for classroom use.

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Worldviews and the Internet

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Abstract

This presentation describes a series of seminars conducted at the College of Economics at Aoyama Gakuin University in Tokyo, Japan. They focus on the integration of three pedagogical elements: 1.) Worldviews; 2.) Advanced Computer Skills; and, 3.) English Language Education. The aim of the project is to incorporate these seemingly disparate fields together to create a greater understanding of each the three elements.

The highlight of this series was a joint lecture given by Dr. Yee and myself. Dr. Yee is a theologian from Oxford University who specializes in worldviews and she gave several lectures about her research and the Internet. By participating in these seminars, students increased their understanding of worldviews. At the same time, they improved their computer and language skills by getting involved in web page making activities and a group presentation using PowerPoint software. The following paper summarizes our models of worldviews, the content of the course syllabus, and various activities, which the students participated in.

Course

This series of seminars, conducted over two terms were offered for Economics majors participating in the Language and Communication Seminar. Third year and Fourth year students who are concerned with the impact of the natural and social sciences on the exposition of theology were also invited to attend. I lead the series with the assistance of Dr. Yee Margaret from Oxford University. The discussion was multi-disciplinary in form, with specific attention being paid each seminar to current thinking in science/religion and global communication.

Goals

The detailed aim of the course was fourfold: (a) to introduce students to a precise understanding of the principles of knowledge in the sciences and religion; (b) to Compare Eastern and Western approaches to world views and evaluate their comprehensiveness; and (c) to enable students to appreciate the principles by which non-partisan, open approaches to the world, may be pursued. As a result, a more cross-culturally sensitive understanding of human nature may be communicated and further researched; and finally, (d) to enable students to become familiar with advanced modern information technology such as the Internet.

Structure of series

Part I: Worldviews: Part I, Science and Religions, is an introductory course, concerned primarily with principles of knowing in the sciences, humanities, and world religions. Part II: Global Communication and the Internet, is a more advanced and practical course, and assumes attendance of Part I. Several Aoyama Gakuin University and Oxford academics with expertise in one of the sciences and religion also took part. The central interest throughout each seminar was the relation of the sciences and theology to global communication. The vacation period between Parts I & II allowed students to pursue wider reading and practicals (Web making, familiarization with the Internet and PowerPoint presentation skills.)

Method of Assessment and Examination

These seminars complement one-to-four tutorials given by myself to students being prepared for working in the international society. A 1500-word (minimum) essay is to be submitted and discussed at tutorials, along with weekly reading assignments. At the seminars, there is the opportunity for each student to participate fully in the discussion and presentation with PowerPoint and Internet. Students are required to attend both their tutorials and this series of seminars together with specific complementary lectures. The marking system employed on essays and presentations is based on the normal grading scale.

The Course Leader and Colleague

Hiroyuki Obari, BA (Political Science, University of Oklahoma, USA), MA (Public Administration, International Christian University, Japan), MA (TESOL, Columbia University), is Professor at the College of Economics at Aoyama Gakuin University. His research focuses on language and communication, the relation of theology and the sciences (including world views), and Information Technology. He lectures to all levels of students in the department.

Dr. Margaret Yee (Visiting lecturer during the course) has research interests in the relation of the History & Philosophy of Science, Cognitive Sciences & Theology, University of Oxford, U.K.

Pedagogical Highlights

- Half-hour lecture on topic, followed by discussion.
- Suitable PowerPoint and Internet Representation throughout.
- Worksheets put on the web prior to seminar with:
- Recommended reading;
A question on topic to be considered both in English and in Japanese from a scientific and a theological viewpoint; exercise in PowerPoint Presentation.
- Multi-disciplinary discussion both in Japanese and English in both the sciences and theology, and global communication contributing.
- Open discussion between students and teachers encouraged, with coordinating summary at close.
- Method of teaching: videotaped and taped lectures from Oxford.
- Questionnaire for feedback at end of Part II and I.
- Learning PowerPoint skills, Internet skills, and Making WebPages.
- Familiarity with oral presentation both in English and Japanese.
- Video Conferencing.
- Dr. Yee's visit to our Campus in April to hold an intensive seminar about Worldviews and the Internet at Aoyama Gakuin University and deliver a number of seminars and public lectures on this area of thought.

Semester 1

Part I: Topics - Science and Religious Worldviews and the Internet

1.
 - a. The Power of the Internet – General Technology, Basic Skills.
 - b. Global Communication and exchange of worldviews, noting differences culturally and religiously (east and west) and academically (physicalist vs. critical realist) Special lecture 1 given by Dr. Yee from Oxford University.
2. Worldviews, their differences and the possibility of global exchange.
Frames of reference, assumptions and criteria of judgment to be addressed. Special lecture 2 given by Dr. Yee from Oxford University.
3. Basic Skills of Internet Research. (Metasearch Engines and Search Engines) Students were divided into five groups and started to prepare for doing some research using Internet.
Basic Skills of PowerPoint and Presentation Skills (1)
4. Basic Skills of PowerPoint and Presentations Skills (2)
Students started to learn how to give an oral presentation in English from the model of international conference and presentation skill video.
5. Basic Skills of PowerPoint and Presentations Skills (3)
Global Communication: language and culture.
- 6-8. Criteria of judgment and interpretation. Particular attention was given to review the two lectures of Dr. M.M. Yee on the Principles of Knowing: Science, Humanities and Theology: -
 - a. Principle of knowing: Theology and the Sciences- Dr. M.M. Yee's 3-D Graphics of a "popular" exclusive view of reality contrasted with an "alternative" inclusive view of reality.
 - b. A Science of God? Divine Mystery and Paradox and some Residual difficulties-Austin Farrer.
 - c. A Global Worldview? Revelation OR Reason, or Revelation AND Reason.
9. Oral Presentation with PowerPoint by two groups.
10. Oral Presentation with PowerPoint by three groups.
11. Assessment and examination.

Semester 2

Part II: Topics- An Inclusive versus An Exclusive Worldview.

1. Global Communication and Comprehensivity – The comparative graphics, G1 and G2 of Dr. Yee's research work will be discussed and critically evaluated.
2. The implications of a model that is inclusive (Graphic 2) will be presented, indicating the "power" of this model for encompassing multi-issues, e.g.-Multi-cultural, Multi-racial, Multi-faith, and Multi-disciplinary.
Preparation for making Web Pages (1).

3. The open horizons of the science-theology model (Graphic 2-M.M. Yee) will be explored.
Preparation for making Web Pages (2).
4. Human life and consciousness: Science AND Theology. Students will be studying the lecture with CD-Rom and have a discussion in the class. Preparation for making Web Pages (3).
5. Human life and consciousness: Science AND Religion.
Students will be studying the lecture with CR-Rom and have a discussion in the class. Preparation for making Web Pages (4).
6. Human life and consciousness: Public ethics and public issues. Distinction between moral injunctions and Dr. Yee's "empirico-cognitive" principles of knowing, by which fact and error may be exposed will be made. Students will be studying the lecture with CD-Rom and have a discussion in the class. Preparation for making Web Pages (5).
7. Students will prepare for English oral Presentation as a group of 4.
They have been doing some research about certain topic which they chose during the whole term and start integrating what they have learned in the
Class with computer skills such as Internet research, making homepages, and PowerPoint Presentation.
8. Oral Presentation with a PowerPoint and home page. (1)
9. Oral Presentation with a PowerPoint and home page. (2)
10. Comprehensivity – Which models? A final appreciation of different worldviews, and the global worldview being developed will be discussed.
The Power of the Internet and Global Communication: Where Now?
This session should summarize all-important points made through the course.
11. Assessment and examination.

What Did the Students Learn from the Course?

First of all, students were required to take notes using word processing programs that they then submitted to the instructor via email. Through these activities, students improved their touch-typing skills while familiarizing them further with e-mail.

Second, they were required to make WebPages and give presentations both in English and Japanese with PowerPoint. In order to make effective WebPages, they had to learn how to use Metasearch Engines and Search Engines. Boolean research methods were also taught to narrow down what to look for from key words. The process of making WebPages in which the students looked for much information and integrate it into their own research could help them to build up their own intellectual frameworks in their academic disciplines.

And, third, lectures given by Dr. Yee helped students to formulate their own worldviews through which they could develop their own way of thinking and expand their ideas in multiple form.

All in all they were exposed to current thinking in the science and religious disciplines as well as advances in global communication. By performing the aforementioned tasks, students saw marked improvement in their computer skills which are so useful in this advanced age of Information Technology.

Conclusion

The great advantage that internet-based teaching and learning offers is variety of content, approach and media. It allows flexibility in finding meaningful activities similar to real life situations, and most of all it allows for authenticity with the help of learning worldviews. The Internet is an exciting new tool for language learning. Though it may have its own limitations, it can add a valuable dimension to face-to-face teaching by providing a new learning environment for meaningful interactive tasks in various settings. What is clear about these developments is that pedagogy is ever more dependent on modern technology. The advent of CGI, helper applications, plug-ins, JavaScript and Java adds interest and ease of use to the material. Therefore what is important for the future CALL is how to integrate the new technology into pedagogy, especially worldview teaching.

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Appendix 1.

Dr. Yee's Explanation of the Model: Graphic 1 and 2

Graphic 1	Graphic 2
Reality judged in terms of Physical	Dynamic interaction & interrelation
Bounded, Limited, Restricted	Unbounded, unlimited, open horizons
	Revisable
Exclusive (Theology excluded by definition)	Inclusive (Theology/Spiritual not excluded by definition)
	Multi-disciplinary, in form

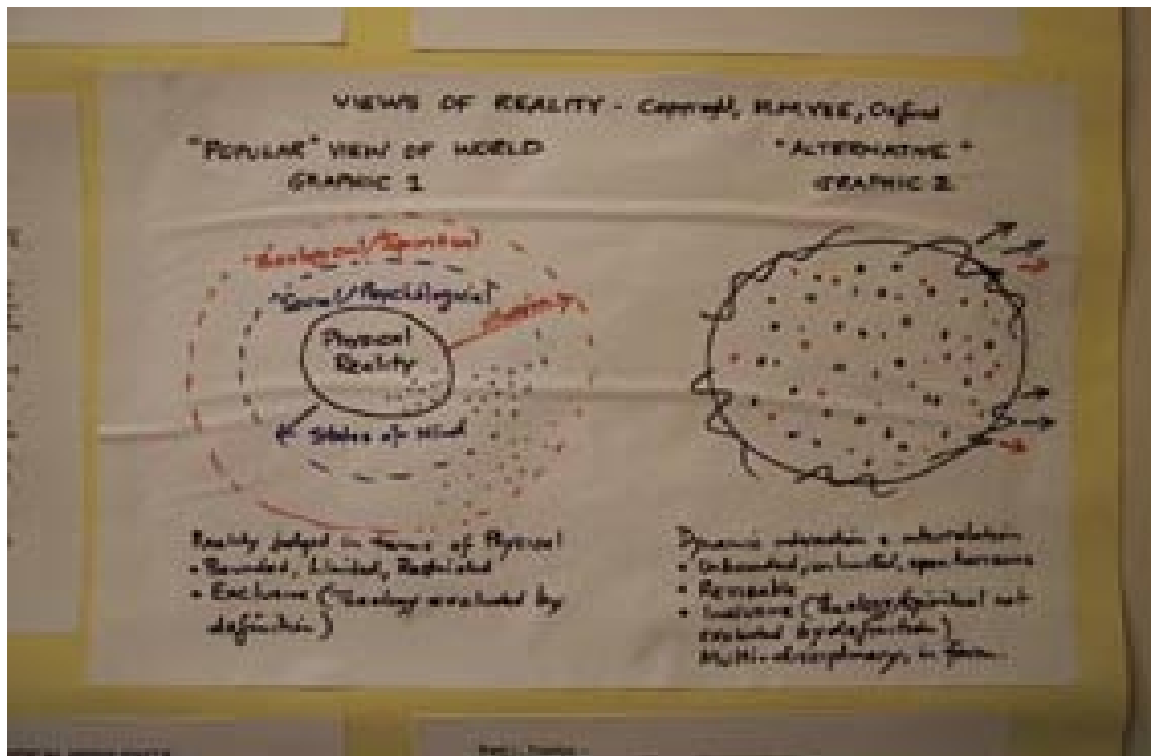


Figure 1. Dr. Yee's Graphics 1 and 2



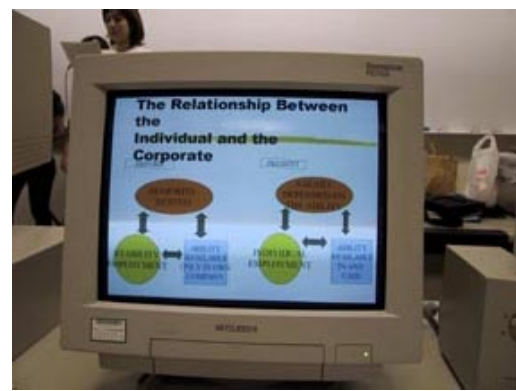
Figure 2. Poster Presentation



Figure 3. Students with Dr. Yee



Figures 4. PowerPoint Presentation



Figures 5. PowerPoint Presentation

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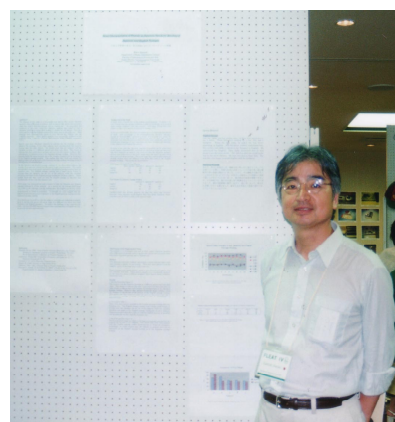
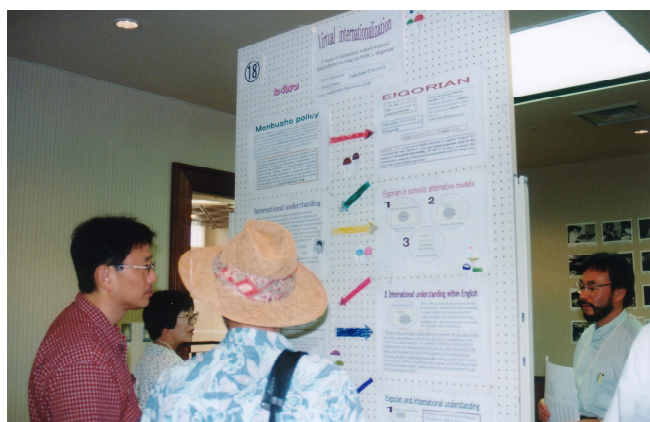
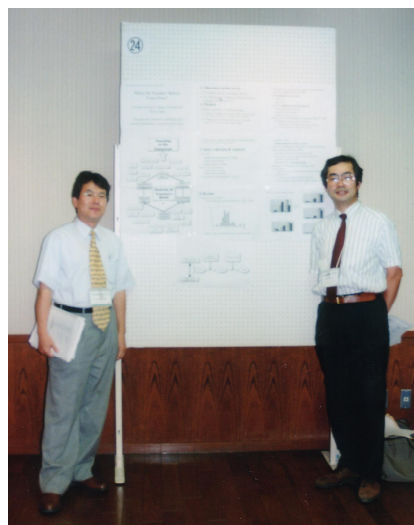
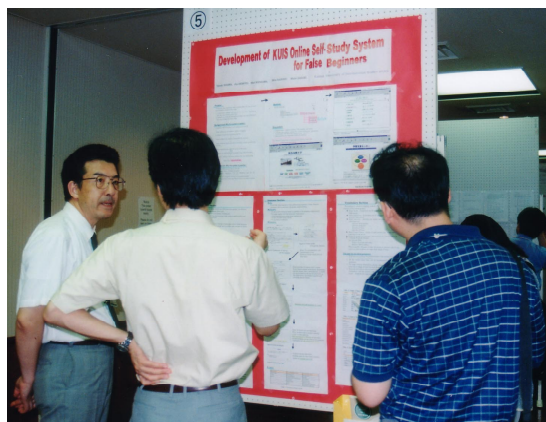
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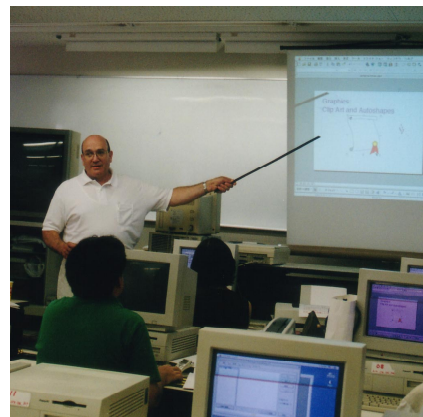


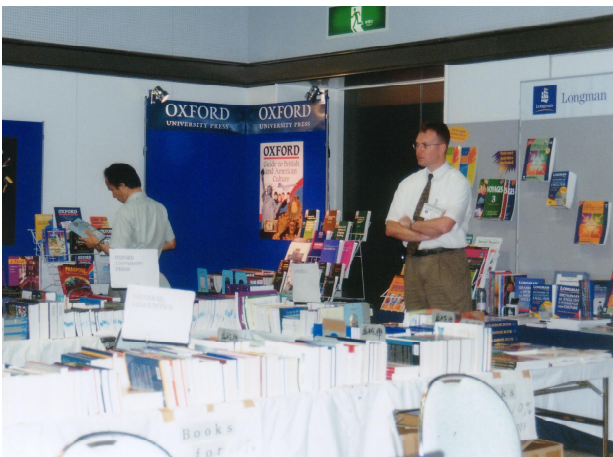
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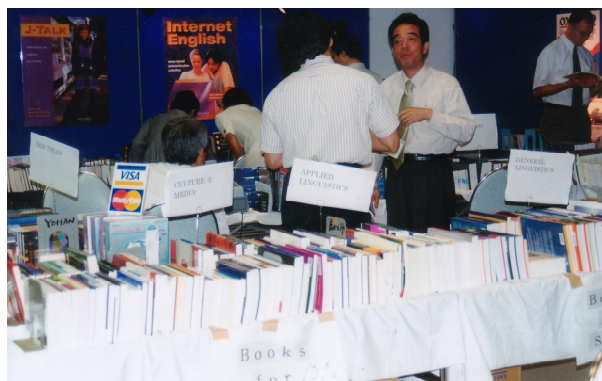




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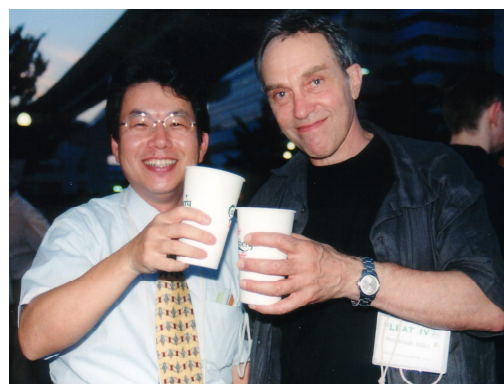
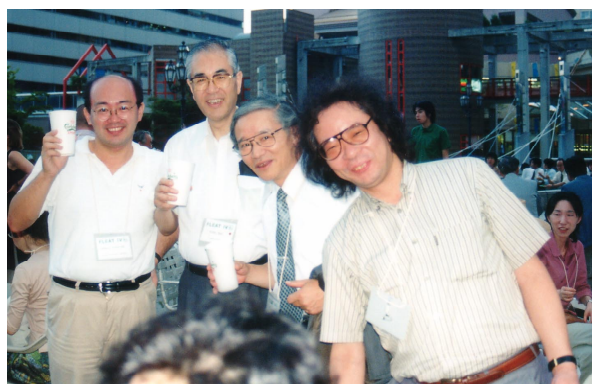


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