

Improving Pronunciation via Accent Reduction and Text-to-speech Software

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This study aimed to find out whether integrating accent reduction and text-to-speech software in elementary language classes would result in improvements in students' pronunciation. The study made use of a quasi-experimental research design since it did not include the use of random assignment. Three classes at a private language institution in Turkey participated in the study. One class (control group) followed traditional instruction (using a CD player and a pronunciation text-book- *Tree or Three?*), another group (experimental group 1) followed traditional instruction which integrated the use of accent reduction software (*Pronunciation Power 1*) and the final group (experimental group 2) followed traditional instruction which integrated the use of accent reduction and text-to-speech software (*Text Aloud MP3* with *NeoSpeech voices*- Paul and Kate). The results of the study showed that the students following instruction integrating the use of accent reduction and text-to-speech software performed better in the post-tests.

1. Introduction

Pronunciation is important not only to communicate ideas easily but also to understand other speakers well. It is particularly important to integrate pronunciation into beginner classes as it will, from the very beginning, help avoid the risks of fossilization and stabilization of pronunciation habits (DETYA, 2001; Ritchie & Bhatia, 2008). This integration can be achieved through various activities such as drills, listen and imitate, and computer-assisted pronunciation teaching (González, 2007; Goodwin, 2001; Hansen, 2005; Kılıçkaya, 2006; Levis, 2007, and Seferoğlu, 2005).

The goal of teaching pronunciation is not to make the learners sound like native speakers of English and only few highly gifted and motivated individuals can achieve it (Jenkins, 2004; Jenkins, 2005). Therefore, a more realistic approach is to enable the learners to pronounce the language without detracting from the ability to comprehend the message (approximating) (Celce-Murcia, M., Brinton, D., & Goodwin, J.D., 1996).

The aim of this study was to find out whether integrating accent reduction and text-to-speech software in elementary language classes would result in improvements in students' pronunciation.

2. Method

The study was designed as a quasi-experimental study since it did not include the use of random assignment.

2.1. Participants

35 Turkish EFL students were the participants of this study. The participants in the study were selected using purposive sampling. Three elementary classes at a private language institution in Turkey participated in the study and were aged between 22 and 28. Most of them were graduates of high schools where English is a must subject. Age and sex were not taken into consideration.

2.2. Instruments

The pre/post test method was used for the study. Pronunciation questions were developed from the book, *Tree or Three?* by Ann Baker (1993), a pronunciation course for beginner and elementary of English and provides practice in the pronunciation of English sounds, word stress and intonation through a variety of interesting exercises and activities. Pre and post tests consisted of three sections: The first section consisted of 20 most-frequently mispronounced words; the second consisted of 10 affirmative and declarative sentences including these words and the last section of a picture which portrays a picnic where some children are busy with activities such as playing a football and eating. Answers for both the pre and post tests were rated according to a 5-point Likert scale for responses.

2.3. Procedure

On the first day of class, an informed consent form was signed by the students agreeing to participate in the study. After students signed the

form, the instructors administered the pre-test. One class (control group) followed traditional instruction (using a CD player and a pronunciation text-book- Tree or Three?), another class (experimental group 1) followed traditional instruction which integrated the use of accent reduction software (Pronunciation Power I) and the final class (experimental group 2) followed traditional instruction which integrated the use of accent reduction and text-to-speech software (*Text Aloud MP3 with NeoSpeech voices- Paul and Kate*). The sample consisted of 10 students in the control group, 13 students in the experimental group 1, and 12 students in the experimental group 2. The study lasted for 16 weeks and the instructor met the groups three hours each week. With the results obtained from the test, and by means of a one-way ANOVA test, it was possible to establish whether or not there were significant differences between two groups of participants at the 0.05 alpha level (see Table 1).

Table 1
Pre-test results

Group	N	Mean	Std. Deviation	Std. Error
control	10	5.60	.516	.163
experimental1	15	5.73	.458	.118
experimental2	10	5.60	.516	.163
Total	35	5.66	.482	.081

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.152	2	.076	.315	.732
Within Groups	7.733	32	.242		
Total	7.886	34			

As can be seen, the significance level was higher than 0.05, $F(2,32) = .315$, which lead to the conclusion that there were no significant differences between the groups. Once this point became clear, the study was carried out with these three groups. On the last day of class, the instructor administered the post-test to all of the groups. Also, the experimental group 2 was interviewed regarding their views on accent reduction and text-to-speech software. The scores obtained by pre and post tests were statistically analyzed to see whether there was a statistically significant difference among the groups.

3. Data Analysis

The post-test scores obtained by experimental and control groups were analyzed using the SPSS software package using the one-way ANOVA test to establish whether there were significant differences among the three groups of participants at the 0.05 alpha levels (see Table 2).

Table 2
Post-test results

Group	N	Mean	Std. Deviation	Std. Error
control	10	62.50	4.859	1.537
experimental1	15	70.33	6.651	1.717
experimental2	10	78.10	2.283	.722
Total	35	70.31	7.851	1.327

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1216.810	2	608.405	22.156	.000
Within Groups	878.733	32	27.460		
Total	2095.543	34			

As can be seen, the significance level was higher than 0.05, $F(2,32) = 22.156$, which lead to the conclusion that there were significant differences between the groups.

4. Findings

Considering the data analysis,

- Experimental group 2 (exposed to accent reduction and text-to-speech software did better than the other groups).
- There were no statistically significant differences in the pronunciation of single words (All the groups did equally well).
- However, there were statistically significant differences between the groups in the pronunciation of sentences (Experimental group 2 did significantly better than the other groups).

During the semi-structured interview session, the participants in the experimental group 2 provided their opinions on accent reduction and text-to-speech software.

- Addition of visual support
- Sheltered practice sessions in which the learner can take risks without stress and fear of error
- Self- pacing
- Immediate feedback
- Pronunciation of any word or sentence.

- Improving writing (They were probably talking about spelling).

5. Conclusion

It is noteworthy to state that the integration of accent reduction and text-to-speech software into classrooms can help learners of English improve their pronunciation due to factors such as practice sessions in which the learner can take risks without stress and fear of error and immediate feedback.

6. Limitations of the study and further research

Since the study was carried out for 16 weeks and two hours for each week with a small number of participants due to the time constraint and the availability of the participants, it is suggested that similar experiments with a large number of subjects should be replicated.

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