



"When Will AI Exceed Human Performance? Evidence from AI Experts"

"Researchers predict AI will outperform humans in many activities in the next ten years, such as

- translating languages (by 2024),
- writing high-school essays (by 2026),
- driving a truck (by 2027),
- working in retail (by 2031),
- writing a bestselling book (by 2049), and
- working as a surgeon (by 2053).

"Researchers believe there is a **50% chance of AI outperforming humans in all tasks in 45 years and of automating all human jobs in 120 years**, with Asian respondents expecting these dates much sooner than North Americans."

Grace et al. (2017)

Can you be replaced by a robot?

[HTTPS://GIGAOM.COM/QUIZ/](https://gigaom.com/quiz/)

1. How similar are two random days of your job?

- 10 - Identical (Data entry clerk, order-taker at fast-food restaurant)
5 - Somewhat the same, with variation (Bank teller)
0 - Completely different (Electrician, movie director, police officer)

2. Does your job require you to be in different physical locations, even different rooms?

- 10 - No ("I stand in one place and take orders all day" or "I could be in Bora Bora for all they know")
5 - Some movement (Hospital nurse)
0 - Yes (Interior decorator, tour guide)

3. How many people do your job?

- 10 - Lots - It is an established job everyone knows about. (Doctor, lawyer, teacher, gardener)
5 - Some - People have probably heard of this job, but few people know one. (Set designer, skydiving instructor, honest politician)
0 - Few - I have to explain to people what I do. (Literary agent, customs broker)

4. How long is training for your job?

- 10 - A few days (Custodian)
5 - A few weeks (Oilfield roughneck, commercial fisherman, flight attendant)
0 - Months or years (Dental hygienist, auto mechanic, locksmith)

5. Are there non-repetitive physical requirements of your job?

- 10 - No. (Programmer, cashier)
5 - Some (Security guard)
0 - Yes. (Dance instructor)

6. How long does it take to make the hardest decisions on your job?

- 10 - Less than two seconds (Movie ticket sales, toll booth operator)
5 - Two to five seconds (House painter)
0 - More than five seconds (Trial lawyer)

<https://gigaom.com/quiz/>

7. Does your job require emotional connections to people or charisma?

- 10 - No (Data entry, construction worker)
5 - Some (Lawyer, sales person)
0 - Yes (Comedian, child psychologist, mayor)

8. How much creativity does your job require?

- 10 - None (Warehouse worker, assembly line worker)
5 - Some (Chef, travel agent)
0 - Lots (Writer, web designer, florist)

9. Do you directly manage employees?

- 10 - No (Flight attendant)
5 - Some (Restaurant manager)
0 - Yes, and I mentor and coach as well. (Police chief)

10. Would someone else hire into your job do it the same way?

- 10 - Yes, exactly (Data entry)
5 - Close, maybe 75% the same (Dentist, house painter)
0 - No (screenwriter)

<https://gigaom.com/quiz/>

My Score?

"**Good news!** This job scored a 29 on our 100 point scale, where a 0 is a job a robot can never do, and a 100 is one that will certainly be replaced by automation. Any job below a 70 is probably safe for over a decade. Any job below a 60 will probably be around for decades to come."

<https://gigaom.com/quiz/>

How can EFL teaching remain relevant?

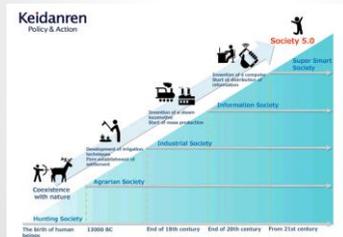
- Issues to consider
 - **Advances in technology**
 - Generation Z
 - English as a lingua franca
- A way forward

Advances in Technology

- First industrial revolution (1760-1830)
 - Harnessing water and steam power to mechanize production
- Second Industrial Revolution (1870-1914)
 - Using electric power
- Third Industrial Revolution (1980-)
 - Using electronics and information technology
 - Going digital
- Fourth Industrial Revolution (2016-)
 - Fusing technologies and disciplines

Fourth Industrial Revolution

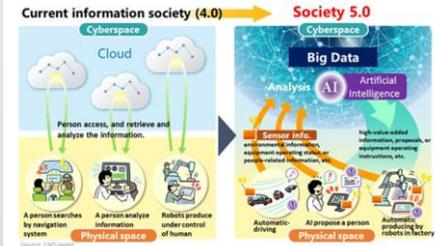
- First used in 2016 by the World Economic Forum Annual Meeting in Davos, Switzerland: "Mastering the Fourth Industrial Revolution"
- Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum (2016a):
 - "This Fourth Industrial Revolution is, however, **fundamentally different**. It is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even **challenging ideas about what it means to be human**."
- Holds great **promise** as well as great **peril**



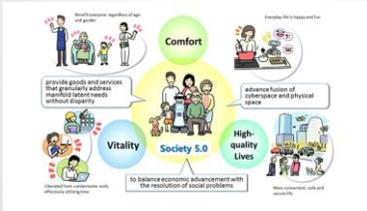
Keidanren, 2016
http://www.keidanren.or.jp/en/policy/2016/029_outline.pdf

Society 5.0

- Proposed by the Japanese Cabinet Office in 2014 as part of the 5th Science and Technology Basic Plan
- Defined as **"A human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space."**
- Follows the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0), and information society (Society 4.0)



Cabinet Office, 2014
http://www8.cao.go.jp/cstp/english/society5_0/index.html



Cabinet Office, 2014
http://www6.cao.go.jp/cstp/english/society5_0/society5_0e-01.jpg

Something to ponder on

- "With every new major innovation there have been those who have claimed that as a result we have lost some part of our essential humanity."
- "The Greek philosopher Plato suggested that with the invention of writing humanity lost a skill in the use of memory that was an essential part of being human."
- **How do we harness the possibilities of advancing technology?**

Future Learn, Why We Post, 2018
<https://www.futurelearn.com/courses/anthropology-social-media/9/steps/329671>

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- Issues to consider
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What about our students?

Identifying generation groups

- Economic conditions
- Cultural norms and mores
- Technological advances
- World events

Chun et al. (2017)

Gen Zers = People of Generation Z

From an American viewpoint

- The Veterans 1925-1944
- Baby Boomers 1946-1964
- Generation X 1965-1980
- Generation Y 1981-1995
- Generation Z 1995-2010

Chun et al. (2017)

Gen Zers

- Form the population of our students in college today
- Are digital natives
 - Spend a lot of screen time
 - Are tech-savvy
 - Obtain information from web sources, some of which may not be reliable
 - Are accustomed to texting with "slanguage"

Chun et al. (2017)

Impact on learning

- Short attention span
 - About 6 seconds to view a Facebook post or YouTube video
 - "Acquired attention deficit disorder" (Fudin, 2012)
- Stronger reliance on visual forms
- Instant results and constant feedback expected

Chun et al. (2017)

What do Generation Z EFL students need?

They need to be prepared for Society 5.0

Keidanren predicts:

"A new economy and society which focuses on individuals"

To realize this, we need educational reform to:

- Enable everyone to **think independently**
- Enable everyone to create new values in **collaboration with others**
- Foster **creativity**
- Improve **IT literacy** from primary and secondary levels
- Promote **lifelong education**

Need to rethink education systems

"By one popular estimate **65% of children entering primary schools today will ultimately work in new job types and functions that currently don't yet exist.** Technological trends such as the Fourth Industrial Revolution will create many new cross-functional roles for which employees will need both technical and social and analytical skills.

"Most existing education systems at all levels provide highly siloed training and continue a number of 20th century practices that are hindering progress on today's talent and labour market issues."

World Economic Forum, 2016b

Something to ponder on

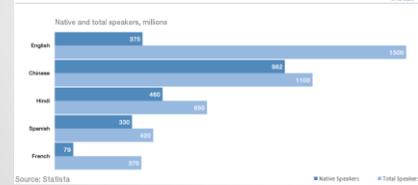
- How do we prepare our Generation Z students for Society 5.0?

How can EFL teaching remain relevant?

- Issues to consider
 - Advances in technology
 - Generation Z
 - **English as a lingua franca**
- A way forward

English as a lingua franca

These languages have the most speakers



World Economic Forum, 2015

<https://www.weforum.org/agenda/2015/10/which-languages-are-most-widely-spoken/>

Until now, most EFL approaches

- have used the **English native speaker as the target model**.
- have usually meant **acculturating non-English speakers to an English language view of the world**.
- have recently been promoting "active learning" or critical thinking skills as part of **a suite of academic literacy skills**.

Two problems

- Linguistic difference between English and Japanese
- Cultural differences among English-speaking cultures and Japanese culture

Foreign Service Institute Language Difficulty Ranking

- **Category I** : Danish, Dutch, French, Italian, Norwegian, Portuguese, Romanian, Spanish, Swedish → **23-30 weeks**
- **Category II**: German, Indonesian, Malaysian, Swahili → **36 weeks**
- **Category III**: Albanian, Bengali, Burmese, Czech, Finnish, Hebrew, Hindi, Lao, Nepali, Polish, Russian, Serbo-Croatian, Sinhala, Thai, Tagalog, Turkish, Vietnamese, Zulu, etc. → **44 weeks**
- **Category IV** : Arabic, Cantonese, Mandarin, **Japanese**, Korean → **88 weeks** (Languages in this group are considered to be "super-hard" for native English speakers.)

Foreign Service Institute
<https://www.state.gov/m/fsi/sis/index.htm>

Two points to consider

1. Nishikawa-Van Eester (2016)
 - Examined research on language/linguistic distance and found no clear-cut definition or measurement system
 - Suggested that rather than rely too much on linguistic distance, more consideration should be given to **motivation** for learning a second language
2. Changes to CEFR 2001 descriptors (2018)
 - Deletion of "native" and "native speaker"
 - Example for C2 UNDERSTANDING: **A NATIVE SPEAKER-AN INTERLOCUTOR**
 - Can understand any **native-speaker**-interlocutor, even on abstract and complex topics of a specialist nature beyond his/her own field, given an opportunity to adjust to a **non-standard** less familiar accent or **dialect**.

What about cultural differences?

- "**Culture** is **the collective programming of the mind** which distinguishes the members of one category of people from another." (Hofstede, G. [1984]. National cultures and corporate cultures. In L.A. Samovar & R.E. Porter (Eds.), *Communication Between Cultures*. Belmont, CA: Wadsworth, p. 31).
- "**Culture** is the **shared knowledge and schemes** created by a set of people for perceiving, interpreting, expressing, and responding to the social realities around them" (Lederach, J.P. [1995]. *Preparing for peace: Conflict transformation across cultures*. Syracuse, NY: Syracuse University Press, p. 9).

Where problems can arise?

- Values
 - Core beliefs
 - National characteristics
 - Attitudes and world view
- **Communication Patterns**
 - Speech styles
 - Listening habits
- Concept of Space
- Concept of Time

<http://www.crossculture.com/about-us/the-model/>

Linguistic Relativity Wolff & Holmes (2011)

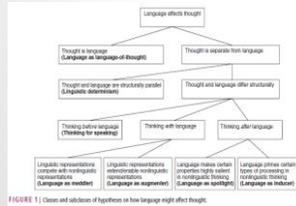


FIGURE 1 | Class and subclass of hypotheses on how language might affect thought.

Linguistic Relativity Wolff & Holmes (2011:261)

"Our survey of the field suggests that at least two versions of the Whorfian hypothesis can be dismissed, namely those based on language as language-of-thought and linguistic determinism.

"On the other hand, five other versions of the Whorfian hypothesis have garnered empirical support:

those in which **thinking occurs before language use**

(**thinking for speaking**),

those in which **linguistic and nonlinguistic codes compete with each other (language as meddler)**

or in which **linguistic codes extend nonlinguistic thinking**

(**language as augmenter**),

and those in which **thinking is directed toward properties highlighted by language (language as spotlight)**

or in which **language engages a schematic mode of processing**

(**language as inducer**)."

Linguistic Relativity Wolff & Holmes (2011)

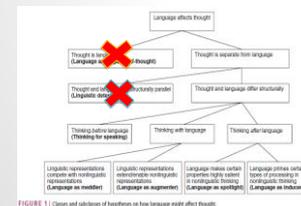


FIGURE 1 | Class and subclass of hypotheses on how language might affect thought.

Something to ponder on

- How can we overcome linguistic and cultural issues in language learning?

How can EFL teaching remain relevant?

- Issues to consider
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 - Generation Z
 - English as a lingua franca
- **A way forward**

Issues to ponder on

- How do we harness the possibilities of **advancing technology**?
- How do we prepare our **Generation Z** students for **Society 5.0**?
- How can we overcome **linguistic and cultural issues** in language learning?

Is there a way of teaching English that does **not** require thinking in an "English" way?

Yes! Let's turn to about a half century of work in **English for Specific Purposes.**

A genre-based approach based on ESP concepts

Can make students aware of how genre texts are constructed and the sociohistorical factors behind them

Does not enforce "logical thinking"

Does make students aware of the existence of various discourse communities

Shows how information is disseminated

Ability to use English in professional contexts is a **must** in academia, business and political situations

However, the use of English does not and should not signify the exclusion or rejection of non-Western ideas and concepts

Professionals need to actively participate in their communities

"Knowledge becomes, therefore, a **"language game"** that is maintained through the interaction of **community members**. It is the **linguistic activity of the members in debating, revising, and legitimizing the "paradigms"** that make sense to them that constitute knowledge.

'If a student doesn't adopt the established discourses of a discipline, then she simply **loses her claim for membership in that community.**'

(Canagarajah, 2002)

Can free English teaching from culture-bound concepts by focusing on the texts themselves

Tribble (2017) on **ELFA (English as a lingua franca in academic settings)** suggests:

'a Genre informed paradigm which draws on an apprentice vs. expert dichotomy" would be useful as a basis for planning the instruction.'

ELF users can efficiently learn the "form" of the target genre to fulfill the "function."

Freire (1997) on the "Dominant Syntax"

"the more the oppressed, the poor people, grasp the dominant syntax, the more they can articulate their voices and their speech in the struggle against injustice"

"It's impossible to think of language without thinking of ideology and power"

Freire recognizes that **teachers need to teach the "cultivated" pattern** to empower their students with the ability to send out effective messages

ESP can offer a **rational, heuristic** approach to **professional level mastery** of the English needed for **participation in discourse communities**

Key concepts of ESP

- Discourse community
- Genres
- Moves

How to master ESP

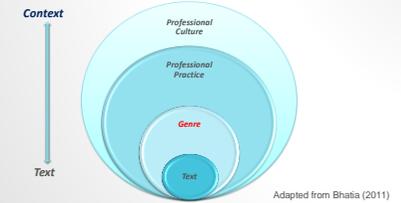
- OCHA
- PAIL
- Hint expressions

What is a discourse community?

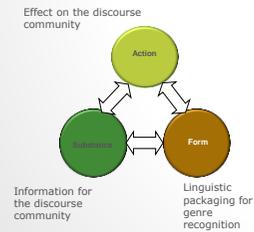
A discourse community

- Is a group of people who are connected by discourse
- Has means of communication → **Genres**
- Is not bound by location → Global connections
- **In the case of a professional community:**
Constructs knowledge in the relevant field

Perspective view of text and its relationship to the profession



Genre: a repeatedly used communication event



How to learn about genres

- **Observe** → **Purpose**
 - **Classify** → **Audience**
 - **Hypothesize** → **Information**
 - **Apply** → **Language features**
- Rhetorical framework
Collocations
Grammar & technical points
Pronunciation & prosody

From corpus linguistics

- **Language users rely on their linguistic experience**, which leads to frequency effects including the use of collocations
- **Language acquisition is an imitative process** with generalization
- As language competence and performance are based on total experience of language use, **large-scale corpora can serve as a proxy**
- **Naturally produced example of usage** is better than a fabricated example

McEnery & Hardie, 2012:220-221

An example of Genre Analysis

- Have frameworks of **moves**
Example : Abstract moves
Background
Aim of study
Materials and methods
Results, Conclusions
- Use **hint expressions** to guide the audience

Evaluation of novel computerized tomography scoring systems in human traumatic brain injury: An observational, multicenter study

- PLOS One: August 3, 2017
- <https://doi.org/10.1371/journal.pmed.1002368>
- Eric Peter Thelin, David W. Nelson, Juho Vehviläinen, Harriet Nyström, Riku Kivisaari, Jari Siironen, Mikael Svensson, Markus B. Skrifvars, Bo-Michael Bellander, Rahul Raj
- Affiliations: Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden, Division of Neurosurgery, Department of Clinical Neurosciences, University of Cambridge, Cambridge Biomedical Campus, Cambridge, United Kingdom

Evaluation of novel computerized tomography scoring systems in human traumatic brain injury: An observational, multicenter study

Traumatic brain injury (TBI) is a major contributor to morbidity and mortality. Computerized tomography (CT) scanning of the brain is essential for diagnostic screening of intracranial injuries in need of neurosurgical intervention, but may also provide information concerning patient prognosis and enable baseline risk stratification in clinical trials. Novel CT scoring systems have been developed to improve current prognostic models, including the Stockholm and Helsinki CT scores, but so far have not been extensively validated. The primary aim of this study was to evaluate the Stockholm and Helsinki CT scores for predicting functional outcome, in comparison with the Rotterdam CT score and Marshall CT classification. The secondary aims were to assess which individual components of the CT scores best predict outcome and what additional prognostic value the CT scoring systems contribute to a clinical prognostic model.

TBI patients requiring neuro-intensive care and not included in the initial creation of the Stockholm and Helsinki CT scoring systems were retrospectively included from prospectively collected data at the Karolinska University Hospital (n = 720 from 1 January 2005 to 31 December 2014) and Helsinki University Hospital (n = 395 from 1 January 2013 to 31 December 2014), totaling 1,115 patients. The Marshall CT classification and the Rotterdam, Stockholm, and Helsinki CT scores were assessed using the admission CT scans. Known outcome predictors at admission were acquired (age, pupil responsiveness, admission Glasgow Coma Scale, glucose level, and hemoglobin level) and used in univariate, and multivariable, regression models to predict long-term functional outcome (dichotomizations of the Glasgow Outcome Scale [GOS]). In total, 478 patients (43%) had an unfavorable outcome (GOS 1–3). In the combined cohort, overall prognostic performance was more accurate for the Stockholm CT score (Nagelkerke's pseudo-R² range 0.24–0.28) and the Helsinki CT score (0.18–0.22) than for the Rotterdam CT score (0.13–0.15) and Marshall CT classification (0.03–0.05). Moreover, the Stockholm and Helsinki CT scores added the most independent prognostic value in the presence of other known clinical outcome predictors in TBI (6% and 4%, respectively). The aggregate traumatic subarachnoid hemorrhage (tSAH) component of the Stockholm CT score was the strongest predictor of unfavorable outcome. The main limitations were the retrospective nature of the study, missing patient information, and the varying follow-up time between the centers.

The Stockholm and Helsinki CT scores provide more information on the damage sustained, and give a more accurate outcome prediction, than earlier classification systems. The strong independent predictive value of tSAH may reflect an underrated component of TBI pathophysiology. A change to these newer CT scoring systems may be warranted.

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- **Background**
- **Importance**
- **Unresolved problem**

- **The primary aim of this study was to evaluate the Stockholm and Helsinki CT scores for predicting functional outcome, in comparison with the Rotterdam CT score and Marshall CT classification. The secondary aims were to assess which individual components of the CT scores best predict outcome and what additional prognostic value the CT scoring systems contribute to a clinical prognostic model.**

- **Aim of study**

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- **Materials and methods**

- In total, 478 patients (43%) had an unfavorable outcome (GOS 1–3). In the combined cohort, overall prognostic performance **was more accurate for** the Stockholm CT score (Nagelkerke's pseudo-R² range 0.24–0.28) and the Helsinki CT score (0.18–0.22) than for the Rotterdam CT score (0.13–0.15) and Marshall CT classification (0.03–0.05). Moreover, the Stockholm and Helsinki CT scores added the most independent prognostic value in the presence of other known clinical outcome predictors in TBI (6% and 4%, respectively). The aggregate traumatic subarachnoid hemorrhage (tSAH) component of the Stockholm CT score **was the strongest predictor of** unfavorable outcome. **The main limitations were** the retrospective nature of the study, missing patient information, and the varying follow-up time between the centers.

- **Results**

- The Stockholm and Helsinki CT scores **provide more information on the damage sustained, and give a more accurate outcome prediction, than earlier classification systems.** The strong independent predictive value of tSAH **may reflect** an underrated component of TBI pathophysiology. **A change to these newer CT scoring systems may be warranted.**

- **Conclusion**

- **Implications**

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Google Scholar search results

• is a major contributor to	about 89,100 results
• systems have been developed to improve	1,210
• have been developed to improve	36,200
• The primary aim of this study was to	33,100
• The secondary aims were to assess	171
• The secondary aim was to	9,190
• In total	4,350,000
• were retrospectively included from	143
• was more accurate for	3,970
• was the strongest predictor of	42,300
• The main limitations were	860
• provide more information on	33,400
• give a more accurate	35,800
• may reflect	1,640,000
• A change ... may be warranted	516,000

Grading of abstracts written after 10 online ESP lessons on research paper writing (n = 431 engineering abstracts)

Score	文法、スペル、フォーマット (6点満点)	ムーブ (6点満点)	Hint expressions (6点満点)
1	4	1	0
2	26	5	19
3	189	54	57
4	117	100	123
5	89	151	160
6	6	120	72
Average score	3.6	4.8	4.5

Comments from students on learning about professional discourse

• I had not thought much about the origins of the paper until I attended this class. Previously, it took me a lot of time to read a paper **because I was reading it in the same way as I read a novel**. By analyzing my composition on my own, I became able to understand where the author wants to say little by little. In addition, I was able to learn how to express it.

• 英語論文を読む時はただひたすら辞書を片手に訳すことでほとんどの時間を要し、内容を理解するのはこの次で、ものすごい時間がかかってしまっていた。論文でよく使われるフレーズやワード、表現を区別しておくことで、自分が論文を書く時にすぐに参考に行けることや、他の論文の盗用にならないようにも気をつけることができたことが多かった。

ESP can help
ELF users express what they want to say but
allow them the freedom
to think as they wish

ELF is not form but function

ELF users can benefit from knowing move frameworks and hint expressions

Key concepts of ESP

- Discourse community
- Genres
- Moves & hint expressions

Important change to CEFR 2001

• Mediation

"The approach taken to mediation is broader than that presented in the CEFR book.

"In addition to a focus on activities to mediate a text, scales are provided for mediating concepts and for mediating communication, giving a total of 19 scales for mediation activities.

"Mediation strategies (5 scales) are concerned with strategies employed during the mediation process, rather than in preparation for it."

North & Piccardo (2016)

• "**mediation** was introduced to language teaching and learning in the CEFR, in the **move away from the four skills, as one of the four modes of communication, that is: reception, interaction, production and mediation**"

• "Also, in many cases, when we use language it is not just to communicate a message, but rather to develop an idea through what is often called 'linguaging' (talking the idea through and hence articulating the thoughts) or to facilitate understanding and communication."

• "Treatment of mediation in the CEFR is **not limited to cross-linguistic mediation** (passing on information in another language) as can be seen from the following extracts":

- Section 2.1.3: Make communication possible between persons who are unable, **for whatever reason**, to communicate with each other directly.
- Section 4.4: Act as an intermediary between interlocutors who are unable to understand each other directly, normally (**but not exclusively**) speakers of different languages.
- Section 4.6.6: **Both** input and output texts may be spoken or written and **in L1 or L2**. (Note: This does not say that one is in L1 and one is in L2; it states they could both be in L1).

CEFR (2018): Companion Volume with New Descriptors

Table 2 – Communicative language strategies in the CEFR

	RECEPTION	PRODUCTION	INTERACTION	MEDIATION
Planning	Framing	Planning	N/A	
Execution	Inferring	Compensating	Turn-taking Cooperating	Linking to previous knowledge Adapting language Breaking down complicated info Amplifying a dense text Streamlining a text
Evaluation & Repair	Monitoring	Monitoring and self-correction	Asking for clarification Communication repair	

Website: 60-second Science

<https://www.60secondscience.com/2018/08/06/single-laser-optical-approach-trans-11-05-20/>
Title: Single Laser Optical Approach Transmits 700 DVDs of Data per Second

- **[Background]** By doing away with an analog conversion, researchers have transmitted 26 terabits of data per second over a 50-kilometer distance with a single laser.
- **[Details from the scientist]** Whether it's for streaming Netflix or sharing files, we're gobbling up more and more data—and we want it faster. But even shooting data with lasers over fiber-optic cables has its limits. Because when you encode digital bits—ones and zeros—into an analog, optical signal, you're still limited by the bit-rate of your electronics. The standing record is about 100 gigabits per second.
- **[Possible applications; importance of this research]** To get around that bottleneck, researchers skipped the electronic signal processing—and found a way to do it purely optically instead. Using that method, they were able to send data over a 50-kilometer length of optical fiber at 26 terabits per second. That's like sending 700 DVDs a second—the fastest ever recorded for a single laser. The research appears in the journal *Nature Photonics*. [David Hillerkus, "26 Tbit/s-1 Line-Rate Super-Channel Transmission Utilizing All-Optical Fast Fourier Transform Processing"] It is possible to transfer equivalent amounts of data with conventional technology, by bundling together hundreds of lasers—but doing it with a single laser is far more energy efficient. Of course, there's no telling when these transfer rates will make it to your living room. And whether they'll be fast enough for our future need-for-speed.

[Note: Details deleted; ongoing research]

Student's research:

[Background: What, Who] ...is what human-beings can do/ but the machine has ...

[Details from the scientist] ...

[Possible applications; importance of this research] The work is essential/ to realize ...

For EFL teaching to remain relevant as a profession,

- we need to harness the possibilities of **advancing technology**
 - Utilize digital tools and devices
 - Employ methods to take advantage of technological advances
- we should help our **Generation Z** students to prepare for **Society 5.0**
 - Understand their characteristics
 - Guide them toward intelligent use of reliable, reputable sources
 - Foster critical thinking and responsible independence
- we must overcome **linguistic and cultural issues** in language learning
 - Grasp what is needed to raise student motivation
 - Help students understand how to make language work for them

The value of mediation

- "The vision of **mediation as a process that connects two spaces** is in fact a fundamental point in the **work of Vygotsky** and to the sociocultural theory that has developed in applied linguistics in North America with reference to his work [Lantolf, 2000]."
- "The most fundamental theoretical postulate of the sociocultural theory is indeed mediation of human thinking, which develops as **"internalization of socially constructed activity"** where "instruction, development, and assessment are inseparable processes dialectically unified in the Zone of Proximal Development (ZPD)" (Lantolf, 2007: 693). We can say that mediation is at the core of knowledge (co)construction. Indeed, **the whole language acquisition process can be defined as "socialization into communities of practice through the mediation of material signs"** (Kramsch, 2002: 6)."
- "This view **completely contradicts traditional theories, which explain language learning as a cognitive process** that happens at the level of the individual, later put into practice in a social context. Such a vision relies upon a separation of language itself and language use: language is seen as a thing apart, separate from both the individual and the social context."

North & Piccardo, 2016: 16-17

British People Are So Lonely That They Now Have a Minister for Loneliness

"The U.K. has appointed a minister for loneliness to deal with what Prime Minister Theresa May called "the sad reality of modern life" for too many people.

Last year, a British commission found that **nearly nine million people** in the country either often, or always, feel loneliness—a condition that can have harmful health repercussions.

(Barron, 2018)

"Across the pond, the American Psychological Association writes that **up to 40 percent of Americans over the age of 45** suffer from chronic loneliness. **"Being connected to others socially is widely considered a fundamental human need—crucial to both well-being and survival.** Extreme examples show infants in custodial care who lack human contact fail to thrive and often die, and indeed, social isolation or solitary confinement has been used as a form of punishment," Julianne Holt-Lunstad, a professor of psychology at Brigham Young University, says in a statement. "Yet an increasing portion of the U.S. population now experiences isolation regularly."

(Daley, 2018)

We can remain relevant as language teachers by helping our students

- Understand the socializing aspect of language
- Grasp the empowering effect of language
- Become motivated to use language to communicate
- Acquire the ability of 'linguaging' to be able to articulate their thoughts
- Collaborate with others to develop Society 5.0

References

- Barron, L. (2018). British people are so lonely that they now have a Minister for Loneliness. *Time*. January 18, 2018. <http://time.com/5107252/minister-for-loneliness-uk/>
- Bhatta, V.K. (2011) Re ESP symposium at the JACET 50th National Conference, Fukuoka, Japan (August 31, 2011), ESP and Professional Practices: insights from theory and practice.
- Cabinet Office, Government of Japan. (2014). Society 5.0. http://www8.cao.go.jp/cstp/english/society5_0/index.html
- Canagarajah, S. (2002). Multilingual writers and the academic community: towards a critical relationship. *Journal of English for Academic Purposes*, 1 (2002) 29-44.
- Chun, C., Dudolt, K., Fujihara, S., Gerschenson, M., Kennedy, A., Kozul, B., Ogata, V., Stearns, J. (2017). Teaching generation Z at the University of Hawaii. *The IAFOR International Conference on Education—Hawaii 2017 Official Conference Proceedings*.
- Daley, J. (2018) The U.K. now has a "Minister for Loneliness." Here's why it matters. *Smithsonian Magazine*. <https://www.smithsonianmag.com/smart-news/minister-loneliness-appointed-united-kingdom-180967883/>
- Foreign Service Institute, School of Language Studies, U.S. Department of State (n.a.) FSI's experience with language learning. <https://www.state.gov/m/s/als/c78549.htm>

- Freire, P. (1997). Paulo Freire—An incredible conversation. Interview conducted at the 1996 World Conference on Literacy organized by the International Literacy Institute, Philadelphia, USA. <http://www.freire.org/paulo-freire/>
- Fudin, S. (2012, March 29). Gen Z & what does it mean in your classroom? *USCRossierOnline*. <https://rossieronline.usc.edu/gen-z-what-does-it-mean-in-your-classroom/>
- FutureLearn (2018). Why We Post—University College London. Week 5 Has social media changed what it means to be human? <https://www.futurelearn.com/courses/anthropology-social-media/5/weeks/329471>
- Grace, K., Salvatier, J., Dabo, A., Zhang, B. & Evans, O. (2017). When will AI exceed human performance? Evidence from AI experts. arXiv.org. Cornell University Library. <https://arxiv.org/pdf/17105.08807.pdf>
- Hofstede, G. (1984). National cultures and corporate cultures. In L.A. Samovar & R.E. Porter (Eds.), *Communication Between Cultures*. Belmont, CA: Wadsworth. p. 51
- McEnery, T. & Hardie, A. (2012). *Corpus Linguistics*. Cambridge: Cambridge University Press.
- Keidanren (2016). Toward realization of the new economy and society—Reform of the economy and society by the deepening of "Society 5.0"— April 19, 2006. http://www.keidanren.or.jp/en/policy/2016/029_outline.pdf

- Lederach, J.P. (1995). *Preparing for peace: Conflict transformation across cultures*. Syracuse, NY: Syracuse University Press. p. 9
- Nishikawa-Van Easter, M. (2016). "Linguistic distance" and its influence on TESOL. *国際政経* 第22号 2016年9月: 21-32.
- North, B. & Piccardo, E. (2016). Common European Framework of Reference for Languages: Learning, Teaching, Assessment. Developing Illustrative Descriptors of Aspects of Mediation for the CEFR. Council of Europe. www.coe.int/t/e/cefr
- Tibble, C. (2017). ELFA vs. Genre: A new paradigm war in EAP writing instruction? *Journal of English for Academic Purposes* 25 (2017) 306-44
- Wolff, P and Holmes, K.J. (2011). Linguistic relativity. *WIREs Cognitive Science*. Vol. 2, May/June 2011: 253-265.
- World Economic Forum (2015). Which languages are most widely spoken? <https://www.weforum.org/agenda/2015/01/which-languages-are-most-widely-spoken/>
- World Economic Forum (2016a). The Fourth Industrial Revolution, by Klaus Schwab. <https://www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab>
- World Economic Forum (2016b). Future Workforce Strategy. *The Future of Jobs Report*. <http://reports.weforum.org/future-of-jobs-2016/4-up-work-force-strategy/>