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ELT in the Age of Artificial Intelligence (AI): Working with Machines

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Abstract

Since 2016, the development of artificial intelligence (AI) has been strong and pervasive, including its roles in business and education. In ELT, in particular, several machine learning models have been implemented such as speech recognition, grammar correction, chatbots, and translation. ELT is in the middle of a rapid and disruptive change and the magnitude of which is paramount that we have never witnessed before. Under this situation, ELT practitioners may have to acquire additional skills and competencies so as to be relevant and thrive in this rapid change and move the field forward to the next level. In this paper, the researcher proposes ELT 3.0, a new vision where working with the machines needs to be incorporated into the existing roles of the ELT teachers.

Keywords: *ELT 3.0, Chatbots, Artificial intelligence, Teacher roles, Technology-enhanced language learning*

Introduction

In the sphere of computer science, a significant event in 2016 brought an end to the so-called AI winter. Following the defeat of the chess champion, the world's Go champion was also beaten by a computer program - AlphaGo. Confidence in the power of machines was at an all-time high. Since then, the development of artificial intelligence (AI) has been strong and pervasive, especially its roles in education. In ELT, in particular, several machine learning models have been implemented such as speech recognition, grammar correction, chatbots, voice cloning, and translation. ELT is in the middle of a rapid and disruptive change and the magnitude of which is paramount that we have never witnessed before.

Prior to 2016, the changing situation was limited, mainly, to theory and speculation. In 2017, Klaus Schwab published his seminal work titled 'The Fourth Industrial Revolution', proposing that the digital revolution would impact all disciplines and industries, including education (Schwab, 2017). Academics have cited the situation everybody is in as the VUCA world (Gläser, 2021), the context that is volatile, uncertain, complex, and ambiguous. Of course, there are other challenges such as climate change and wars, including trade wars. Indeed, uncertainties affect our ability to make prudent decisions.

Indeed, the situation has changed. The Covid-19 pandemic has pushed the learning and teaching onto the online platform. Technology is not just optional, but necessity. ELT has always been a field heavily affected by technological change.

English is the language of business, science and technology, so changes in society are impacting ELT in one way or another. Can ELT teachers keep up with this new shift of rapid development and integration of information technology into ELT? Teacher development is the key answer. Sun (2014), a former TESOL president, recommends that ELT professionals engage in "continuous professional development activities in order to keep current on trends, research, development, and practices as well as to remain effective and competitive" (p. 15). The coming of AI necessitates the need for ELT to be dynamic and agile and the teachers be competent in both pedagogy and technology.

Good news is that the coping ability can be trained and cultivated. Technology affects all, not just older generations. It must be noted here that technology is alienating people – and it's not just those who are older. No one is immune to the coming of AI. AI is encroaching into our innermost lives (Harari, 2018). Many academics caution us to make sure that their goals and ours are benign and coherent. Despite several criticisms, machines are here to stay and with several breakthroughs in biotech, humans need to adapt to function well in the 21st century (Harari, 2018).

ELT and technology are almost inseparable now. Whatever happens with technology, ELT is eventually affected. The coming of the AI age, undoubtedly, alters the practice and conception of ELT.

Aim

The paper aims to propose an intellectual framework on ELT in the age of machine intelligence where humans work with machines, in addition to human-human cooperation.

In short, three questions will be answered:

1. How would AI affect ELT?
2. What is ELT 3.0?
3. Why and how to work with AI?

The underlying assumption is that AI affects all industries and everybody, including ELT as a field and a set of tasks. It must be acknowledged that ELT has embraced technology since its inception. The coming of AI has made several key components seem vulnerable to negative impacts of the new technology. This paper as mentioned proposed a framework - ELT 3.0. Working with AI requires our understanding of how it works.

Goals of ELT

In 1946, the first issue of the ELT Journal mentioned the term 'the enterprise of teaching English as a foreign or second language,' but did not explicitly mention the goal of teaching and learning of the English language. David Crystal, in his seminal book 'English as a Global Language' (1997), implies that English is a major global language that people need to learn and master. This implies a few things: (1) it is a global activity, (2) it is an important language because of its political and academic significance. The status of English has shifted from the language of the inner circle to that of the language that belongs to everybody. As a global language, English is embedded with several values, and one of which is cosmopolitism.

The rise of machines has prompted us to take a closer look at the field as a whole. A plenary paper by Yilin Sun, the former President, TESOL International Association states the goals of ELT as follows:

In the 21st century, the goals of ELT have changed from focusing solely on developing language skills and mimicking native English speakers to fostering a sense of social responsibility in students (Sun, 2014, p. 8)

It seems that the emphasis has been shifted from language skills to character-building. In other words, it is not about teaching English for no purpose, but for the good of society and self-development.

What about the goal of AI? Several scholars have raised concerns over the alignment of human goals and that of the machines. One often cited example is the construction of roads and the demise of ants. The constructor does not hate ants but they simply get in the way of the construction path.

ELT and AI

The first and foremost thing to remember is that English is very AI friendly. Why is it so? Partly, it has a lot to do with the datasets. Also, English is a global language, and also the language of business and technology. So, it is natural that any development in technology would affect the language, positively or negatively, including how it is acquired, assessed, and used.

In fact, language is where AI is vividly manifested - generally speaking, it is the core of everything (Fridman, 2022). Tortermvasana (2022) reported that Thailand's Ministry of Digital Economy and Society (DES), for example, has a high hope for Thailand to be the first to adopt the metaverse technology and commercialize it to reap the benefits. Of course, now there are several online courses aiming to develop teachers' AI skills. A recent one is a chatbot application in the classroom online workshop by Edutech

(EduTech Thailand, 2022). The workshop was advertised as being useful for teaching in promoting efficiency and saving time.

The thesis here is that the two goals should be aligned. AI has a goal to enhance human capabilities. The danger of AI lies not in its malice, but competence, as many experts say. If, for example, the goals of ELT and those of the AI cross and one can imagine what the outcome would be. Hence, it is highly essential for the field (ELT) to talk about the threats and opportunities arising from this new development in computer science.

ELT with AI Elements: ELT 3.0

ELT 3.0 is simply ELT with AI, both concepts (theories), hardware, software, and practice. The field of English language teaching (ELT) could benefit from AI development. Without AI, ELT may be handicapped. The situation may not be one direction or another, but a gradual characteristic. The adoption of AI seems inevitable, just a matter of time before AI has reached its threshold of surpassing the intelligence of humans in general, or the so-called Artificial General Intelligence or AGI. At the core of this general intelligence is the language and communication.

English and technology are two close buddies. English surely has its presence in the metaverse. Mark Zuckerberg is CEO of Meta, formerly Facebook, conceptualizes Metaverse as being both a virtual place and time where people spend their lives the same way people live their lives in the physical world (Zuckerberg, 2022).

ELT 3.0 is an intellectual framework that outlines ELT as having three stages: 1.0, 2.0, and 3.0. At present, ELT is moving into the 3.0 era where AI elements begin to perform key functions with the field. As a matter of fact, ELT has already embraced a significant portion of digital elements in its practice. From text to photos to video. According to Mark Zuckerberg (2021), the metaverse will be even more immersive compared with social media. He said that it is "an embodied internet where you're in the experience, not just looking at it. And we call this the metaverse." In the Metaverse, according to Zuckerberg (2021), we will be able to do almost anything we can imagine, including getting together with friends and family, working, learning, playing games, shopping, and working out. Metaverse would connect people.

Table 1: Technology use in ELT

Dimension	ELT 1.0	ELT 2.0	ELT 3.0
Media	Books, Radio	Computer + Software	Chatbots, Speech recognition
Instruction	Teacher-centeredness	Students-centeredness	Individualized Instruction

Infrastructures & Tools	Sound labs	Computer labs	Smartphones
Chatbots	ELIZA	Pandora bots	AI Chatbots
Classroom	Classroom with Cassette players	Classroom with Desktops	No Physical Classroom
Knowledge	Experts	Experts + Teachers	The World

In terms of media use, ELT 1.0 relies on the use of traditional tools, relying on printed books and basic media such as radio and TV programs. It must be noted here that the movement from 1.0 to 3.0 is not a clear-cut demarcation, but a matter of degree and intensity. In ELT 2.0, computers arrived and computer labs were installed. The year 2016 marked the beginning of English 3.0.

Why Work with Machines

There are several benefits in the cooperation. Machines with better cognitive performance would enable us humans to set goals and procedures in order to accomplish mutual benefits. Kai-Fu Lee (2019) gave an interview, saying that, in addition to jobs that require creativity:

Another type of job that is much numerous would be compassionate jobs that require calm empathy and human touch … AI is cold calculating and even if it can fake that to some extent it will make errors and that will make it look very silly.

In the age of machine intelligence, we humans have to adapt and adjust ourselves to the new environment. We have been ardent and efficient tool makers and users for centuries, but now many aspects of the machines that we have built could exhibit intelligence.

Garry Kasparov (2016) has proposed a principle of excellence based on his chess-playing experience. He said that a human plus machine is superior to a human alone. Later he added another dimension - a superior process. He tweeted to explain his principle as follows:

> *The full "Kasparov Principle" isn't simply that human+machine > machine or human, but that human+machine+superior process is the key.*
>
> *(Kasparov, 2016)*

Obviously, one thing that is certain is that a human alone cannot compete with another human with a machine. After that, it becomes who understands how the machine works best.

Soon, humanoids would be available in many homes. "Tesla's humanoid robot will one day be the most valuable part of the company's business", CEO Elon Musk (Vega, 2022).

How to Work with Machines

One may ask," how would you do?" After the rationale for proposing the ELT 3.0 model and the need for ELT professionals to embrace AI. This section is an example of how teachers could work with machines. The how here should begin with the changing mindset, that is, that machines have the capacity to get things done or achieve their goals, like us humans.

As discussed earlier, the reason why humans should work with machines is primarily better performance. This is tricky as a new form of collaboration because it hurts our pride. Nevertheless, a better mindset, according to Garry Kasparov, a former chess player champion, is to welcome the intelligence of machines (Teicher, 2018).

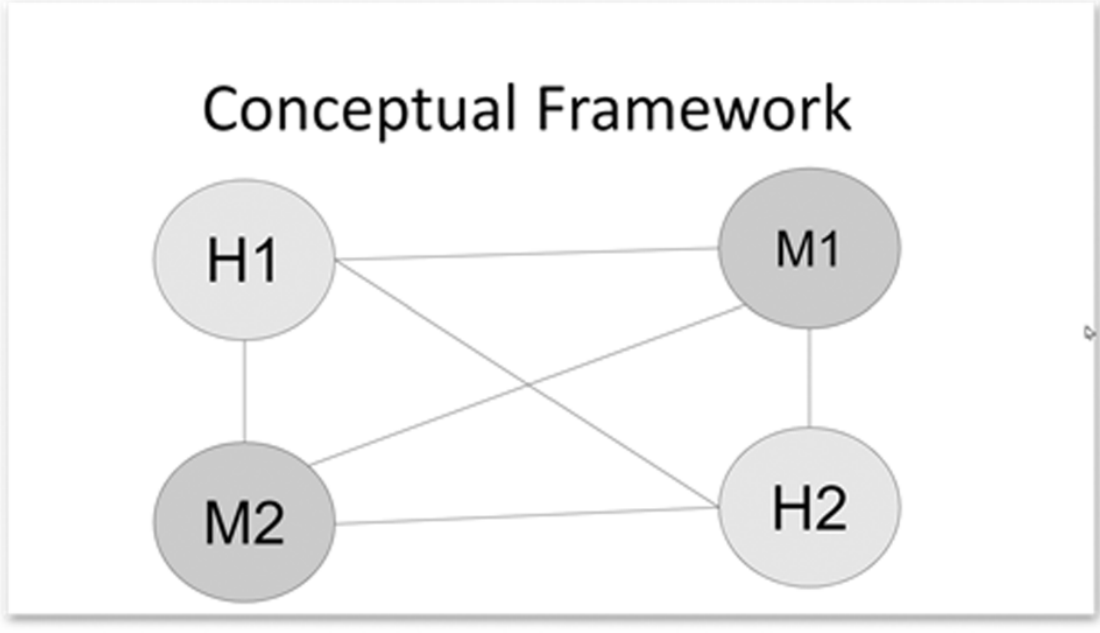

Figure 1: Human-machine collaboration

Julie Shah, an associate professor of aeronautics and astronautics at the Massachusetts Institute of Technology (MIT), and her team have proposed an idea of having humans and machines working together. She explains the need for humans and machines to work together beyond traditional ergonomic design:

> *"This idea of designing for a combined human-machine system is something that grows out of aerospace – a development of pilots working with intelligent systems in the cockpit to fly complex aircrafts… building on these principles, collaborative robots can work alongside humans in a variety of systems, from factories to hospitals."*
>
> *(MIT, 2022)*

One may argue that we are actually working with machines at the moment. It is also true that we need to learn more about how machines work. Professor Mag Tegmark, a physicist and machine learning researcher, has called for AI safety, that is, we humans should make greater efforts to understand machines (Tegmark, 2017). In the bigger picture, he suggests, we need to make sure that AI and humans share the same goals, known as goal-alignment. This means that AI algorithms we develop need to be explainable. It might be the case that ELT practitioners, too, need to conduct research on AI-related disciplines, especially natural language development and applications.

Another point I would like to make here is that we need to have our principles in place. The proposed principle has four elements, namely, criticality, creativity, productivity, and responsibility (CCPR). The model has been proposed as a solution and means to reform education (Sinlarat, 2011). Under this model, learners are expected to be critical, creative, productive, and responsible.

1. Learners with critical thinking skills are thorough in their analysis. They have a deep understanding of society and see the factors and construction of the society and the world.
2. Learners with a creative mind refer to those that seek to add something new to the existing ideas, looking for opportunities to create and adapt the existing tools. This mind that looks at the same event or phenomenon with fresh new perspectives and manages to solve problems under constraints.
3. Productive Mind - The mind that aims to make things happen, including the seeking of new methods, and adding values to the products. This mind is alert to new ideas and would look for ways to create new tools, products, and ideas.
4. Responsible Mind - This mind means having moral integrity, being ethical and responsible for the society, and observing professional ethics. In teaching, responsible teachers perform their duties with integrity and dedication.

In order to work with the machine, one needs to know how the machine works, its capacity, and limitations. This may mean that English teachers learn or acquire additional skills. Lee and Qiufan (2021) suggest two roles for teachers: (1) they can be human mentors and connectors, (2) they can program AI teachers and companions. Machines are good at doing repetitive tasks, but tasks that require creativity and compassion will be better done by humans.

Some Worries and Concerns

The coming of AI is not without skepticism and doubts, including anxiety and worries. There are essentially four big worries: (1) Fear of AI going rogue, (2) Effects on employment, (3) Access and equality, and (4) Human dignity.

First, can AI go rogue? The rise of AI also brings worries. One of them is the values embedded in the system. Malik (2022) wrote that what we should be worrying about is the values we put into the system. An AI chatbot with millions of datasets may still produce texts with prejudice and biases. As we know, algorithms and other forms of software are trained using data from human societies. Without intervention, they will likely replicate the biases and attitudes prevalent in our societies.

Similarly, Hundt et al. (2022) reported that many training datasets have demonstrated spew racism, sexism, and other detrimental biases. They called for measures and regulations governing the design and training of robots and other AI systems.

It was reported that the social media chatbot developed by a Korean startup was shut down on after users complained about the use of profanity or abusive words. This incident is similar to Microsoft's Tay chatbot collapse in 2016 when it sent racist tweets. This raises ethical issues on how to prevent the misuse and abuse of artificial intelligence (Kwon and Yun, 2021).

In ELT, basic decency and standards of rights and wrong must be upheld and maintained in machine learning models and NLP models. A recent incident by a Google's whistle-blower who came out and told the world that the company's AI has come to life, sparking fears that AI might have gained a certain level of consciousness (Tiku, 2022). Similarly, Tay, an AI chatbot designed by Microsoft, was removed from service when it began using abusive and racist language (Schwartz, 2019, November 25). Thus, there should be rules and regulations or guidelines governing the use of AI systems in language education. Indeed, chatbots, mostly, have been trained from datasets from the Internet such as from Facebook and Twitter. They, hence, exhibit human values, reflecting the real-world language use.

Second, will AI take our jobs? To address this question, it is necessary to accept the fact that many aspects of AI have helped us improve our work e.g. translation and grammar correction. In the age of AI, we may have to adjust the way we do things. What AI lacks are compassion and creative elements (Baruch, 2019; Lee, 2019). These areas should be emphasized more in English language education (Preachey and Maley, 2015).

Thirdly, the problem of digital divide remains a thorny issue. We may have to accept the imperfect world we are living in. The treatment of this issue is certainly beyond any single organization or an individual country.

Lastly, the feeling of dignity is being challenged by machines. This is why the need is that we work with the machines. In the past, machines did not have cognitive functions or had limited capacities. Now and the near future to come, machines could offer paths and options for us to make. There is no need for humans to compete with machines in many domains such as carrying tons of goods from A to B. Neither should we feel dehumanized if machines (e.g. cars) can go faster than us. Tasks that are dangerous, boring, and repetitive, should be left to machine automation. We are already cyborgs, according to Elon Musk. Mark Zuckerberg also said that we may be living in the digital world without realizing it. Yet, the acceptance and normalization of our perceptions might take time.

Despite challenges and issues, the development of AI in all spheres of life and industries does not slow down at any rate, primarily due to new geo-political conflicts. Elon Musk, on many occasions, has provocatively warned us that AI is more dangerous than nuclear weapons. Similarly, Harari (2017) also warns us against the inequality of abilities and skills of many people. Some among us stand the risk of being made less relevant and some would end up being 'irrelevant'. All of these predictions seem to signal us that we need to seriously and urgently study the impacts of AI in education, especially language education. As the core of AI is language, working with machines with AI elements, perhaps, is a strong force we are all being gravitated into.

Conclusion

In conclusion, this paper proposes an intellectual framework, ELT 3.0, for ELT professions to function well in the age of AI. This is only a suggestion. Many examples given may sound like an alarmist. We need to realize that we create AI to help humans. It will be harder and harder for us not to take the path of technology. If it were a success, it would be a small part in a debate on the future of ELT, opening up more discussions. Working with machines is not an option; it is likely to be a new normal. AI and its applications are not something out of the field among ELT researchers and practitioners, but something highly relevant to our goals and main activities, against the backdrop of language being the core of everything.

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