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Exploring the Impact of AI on The EFL Context: A Case Study of Saudi Universities

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Abstract: This research aims to determine whether or not it is possible to use artificial intelligence (AI) in English for speakers of other languages (ESOL) courses. The purpose of the research is to analyze and review previous research pertinent to artificial intelligence in EFL/ESL instruction to present a comprehensive picture of the current degree of artificial intelligence in EFL/ESL instruction. The utilisation of intelligent teaching systems, self-regulated learning, virtual reality, immersive virtual environment, and natural language processing in teaching English as a foreign language classroom. The study adopted the questionnaire as a tool for data collection then data was analyzed and discussed to reach the results. The results showed that the ethical responsibility for making the most effective use of AI in the classroom now falls on both educators and students themselves. The article also draws the conclusion that artificial intelligence (AI) has a positive impact on the field of English language teaching (ELT) and learning; however, it needs to be better integrated into educational settings. Teachers and students need to be more aware of the new applications and tools that have flooded the field of AI in recent years. This conclusion was reached in the context of the article.

Keywords: Intelligent Teaching Systems, Self-Regulated Learning, Virtual Reality, Immersive Virtual Environment, Natural Language Processing.

1. Introduction

Artificial intelligence (AI) and the plethora of devices that accompany it are essential for the growth of students' language abilities as well as the maintenance of their engagement with the learning process in today's modern day and age. Numerous studies have demonstrated that this has a beneficial effect on the overall effectiveness of the classroom environment as a whole. According to the opinions of a large number of industry professionals, the advent of the digital age not only changed the fundamental character of education but also created new difficulties, such as modifications to the traditional layout of educational institutions. Since the industry's earliest days, it has been common practice to incorporate some form of artificial intelligence (AI) into the instructional process. Educators can help their students learn more efficiently and retain material for longer periods by introducing AI into the activities that take place in the classroom. When people talk about the possible roles that different kinds of artificial intelligence could play in educational contexts, they frequently use the word "integration." because the use of AI in our day-to-day lives has become so indispensable at this time. Teachers and students need to take a fresh look at the potential advantages that artificial intelligence (AI) could bring to the classroom and prioritise finding ways to implement it. Most teachers believe that implementing some form of artificial intelligence (AI) is necessary to provide students with an excellent education. There is emerging evidence that the use of artificial intelligence (AI) tools in the classroom improves the outcomes of both teachers and students. It is accomplished by enhancing the availability of up-to-date resources for teachers and the accessibility of real-world experiences for students. Students may find that learning a new language is more pleasant and satisfying if they have access to a wider variety of authentic resources, which can be made feasible by technological approaches.

1.1. Research Questions

Q1: What is the role of familiarizing English as a Foreign Language (EFL) instructors and learners with AI technology?

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Q2: How is it significant to implement AI technology in English Language Teaching (ELT)?

Q3: What is the impact of integrating AI technology into educational settings?

2. Literature Review

2.1 Comparison Of Artificial Intelligence-Based (Innovation) Educational Programs Against More Conventional Ones

We are currently in the "*knowledge industry*" period. The primary differences between traditional and knowledge-based software can be summarized as the differences in their respective contents, preparation methods, procedures, and applications (Tulba, 2000).

Some researchers believe that it is necessary to consider the structure of the intelligent teaching system before making any other choices regarding the system's design or growth; this is because the architecture will have an effect on the authoring tools, programming languages, and methodologies that are used. Although specific studies may have a unique approach to creating their systems, all of them have the same fundamental models at heart, including the learner and the traits that define him or her, the instructor and the learning environment. In the design of academic scenarios, these aspects are considered, together with the additional benefits of diagnostic testing and an interactive user interface, as well as the expertise and perspective of subject matter experts.

2.2 Intelligent Tutoring Systems

Using learning models, algorithmic processes, and neural networks, Intelligent Teaching Systems (ITSs) are being developed to assist with one-on-one tutoring and improve a person's ability to remember information better. Pigaiwang (for Chinese students' English writing), Your Verbal Zone (for Turkish students' English vocabulary learning), and Robo-Sensei (for Japanese) are some examples of ITSs that have found widespread use in the field of English as a foreign language (EFL), with positive results in areas such as, for example, grammar acquisition (Jiang 2022 cited in Abu Ghali et al., 2018) and the enhancement of understanding a reading material because ITSs apps provide quick feedback on questions and allow teachers to adjust lectures to the specific requirements of each student (Xu et al., 2019). In addition, the effectiveness of ITSs can be improved by adapting them to a variety of different teaching scenarios. ITSs can help teachers better adapt online teaching modes and content for their students based on their performance profiles (in the context of COVID-19). ITSs can help students better understand their learning. More specifically, ITSs embedded in flipped classrooms help students' problem solve (Mohamed & Lamia, 2018); ITSs help students develop their speaking skills through the self-regulated learning process (SRL) (Mohammadzadeh & Sarkhosh); ITS (Nagro, 2021). Although affective computing (AC) has been widely incorporated into Information and Technology Systems (ITSs) for other educational domains, more studies need to be done to assess the emotional state of English as a Foreign Language (EFL) students when using ITSs. Therefore, from a pedagogical point of view, it may be helpful to incorporate AC into existing ITSs when teaching English as a foreign language (TEFL) would allow for the identification and classification of the feelings experienced by learners, as well as the provision of adequate emotional support to propel EFL instruction.

2.3 Intelligent Virtual Environment

In the past 20 years, there has been a boom in the application of the technology known as virtual reality (VR) in the field of teaching second languages (Rau et al., 2018; Wang et al., 2020). Google Earth (Chen et al., 2020), Google Tour Creator (Nobrega & Rozenfeld, 2019), and Google Expeditions are all examples of products that fall under this category (Rau et al., 2018; Wang et al., 2020). (Xie et al., 2022). It has been demonstrated that applying tools that utilize virtual reality (VR) in the context of English as a foreign language (EFL) also produces a variety of beneficial outcomes. Increased motivation to study English and reduced anxiety when using English in social situations are two benefits (Adolphs et al., 2018); improved vocabulary acquisition and retention (Jiang, 2022) cited in (Lai & Chen, 2021; Tai et al., 2020); and improved English proficiency and openness to communicating in English are also benefits (Adolphs et al., 2018). (Ebadi and Ebadijalal, 2020). (Chien et al., 2020) What constitutes an intelligent virtual environment (IVE) is, according to the definition provided by the Oxford Dictionary, "a mixture of intelligent procedures and tools, embodied as autonomous creatures and agents, together with effective ways for their graphical depiction and interaction of various sorts in a variety of contexts." The introduction of this idea occurs at the same time as computer programs with artificial intelligence have reached a level of development that enables them to compete in online games (Luck and Aylett, 2000). Because of the positive influence that virtual agents, also known as avatars, are capable of having on the user experience and the amount of cooperation that is feasible in a digital space, one of the most prominent use cases for IVE is the creation of virtual agents (Yin, 2022). It has been discovered that having students interact with 3D avatars improves their capacity to comprehend spoken English, particularly in the context of English as a foreign language classes (Lan et al., 2018). Similarly, studies have shown that people who learn a new language with the help of avatars report feeling less worried and more secure in their abilities (Couto, 2016; York et al., 2021). During the Hemagglutinin Neuraminidase (H1N1) pandemic, interactive voice response Interactive Voice Response (IVR) can also be utilized to maintain English as a Second Language (ESL) students' attention in their Zoom virtual classes (Obari, 2020). On the other hand, there are some educators who are skeptical regarding the usefulness of avatars in EFL (English for Speakers of Other Languages) classrooms (EFL). Two examples of the technological factors that give rise to these problems are the public's unwillingness to interact with virtual avatars and the difficulties of doing so in unscripted circumstances. These two instances are examples of the public's reluctance to interact with virtual avatars (Lotze, 2018). Since 2014 (Repetto) (Repetto). However, the deployment of IVE in the context of

EFL is being hampered by the prohibitively expensive cost of the technology and a dearth of readily accessible network resources (Cowie & Alizadeh, 2022). As a consequence, new technological advancements are essential to overcome the technical challenges outlined above, and teachers of English as a foreign language need to receive appropriate training to make effective use of interactive virtual environments (IVE) and avatars in the classroom.

2.4 AI Chatting Robots

Chatbots are computer programs replicating human dialogue in text or voice and can be described as having artificial intelligence. Because they are continually enhancing their knowledge and perception based on the discussions they have had in the past, these computers are able to deliver a more natural form of contact (Haristiani, 2019). Several studies have demonstrated the usefulness of AI chatbots in English for speakers of other languages (EFL). It has been shown that providing EFL students with AI-driven chatbots can improve their spoken communication, reading comprehension, and writing in an argumentative style (Wang & Petrina, 2013). (Jiang 2022 was referenced in (Hong et al., 2016; Kim et al., 2019; and Guo et al., 2022). The use of artificial intelligence chatbots in the classroom has been shown to boost students' levels of interest, as well as their motivation and self-esteem (Kim et al., 2019). Although advanced English language learners have been shown to benefit the most from using AI chatbots, supporters of the technology believe that it is helpful for students of all levels (Kim, 2016). It is essential to keep in mind that modern AI Chatbots may have difficulty identifying and diagnosing some subtle pronunciation defects, in addition to grammatical and spelling errors, when used in circumstances linked to English as a foreign language (EFL). In the article "Artificial Intelligence as a Language Tutor" by Lotze (2018), the author claims that the currently available AI diagnostic systems do not have the required attributes to replace human language teachers in the classroom. Quick wit, creative thinking, and the ability to communicate information clearly and concisely are all valuable qualities. There is a need for additional study to empirically analyze the adaptation of AI chatbots to varying language competency levels and educational circumstances. Additionally, there is a need for additional technological help to improve AI chatbot diagnostic systems. The diagnostic capabilities of AI chatbots can be significantly improved by providing answers to questions similar to those posed above and increasing access to technical assistance for these technologies.

2.5 Changes in Views on What Schooling Ought to Do

According to Fernández-Ro (2016), education requires four things: pupils, teachers, subject matter, and an appropriate environment. Students can learn independently or in groups with their classmates, both of which can help them retain and expand their prior knowledge (Matuk & Linn, 2018). The teachers can keep track of their pupils' development and provide support whenever required. Furthermore, according to Amarasinghe et al. (2022), a teacher can assist students in acquiring the knowledge they seek by using an efficient instructional technique in the classroom. However, the vast majority of educators do not have the time to provide a more comprehensive education to their classes of students (Hamad et al., 2022). (Hamad, et al., 2022). According to the findings of previous studies, integrating technology into classrooms allows educators to make more efficient use of their time (Silvestru et al., 2022 & Hwang et al., 2022).

Due to the fact that technological advancement has reached the point where it can be relied upon, it was incorporated into this investigation because it is a significant resource that may be utilised in educational environments. Students may be able to practice and perfect their English pronunciation without encountering any obstacles if they use speech recognition software and receive some assistance from artificial intelligence (AI) (Hwang et al., 2022). In a different piece of research, Hwang et al. (2021) hypothesized that students could learn geometric concepts that are contextually relevant to their lives if they were taught in real-world situations using AI for shape identification. In particular, the researchers thought that students could learn these concepts if they were taught how to identify shapes using AI. According to the studies conducted (Hwang et al., 2021, 2022) conducted, using technology in the classroom helps increase students' academic performance and also helps keep students motivated. Due to participating in this training, the NLP has significantly enhanced its capacity to read human language. Natural language processing (NLP) can evaluate human language as input using an extensive linguistic model such as Generative Pre-trained Transformer 3's (GPT-3) 175 billion parameters, allowing NLP to generate new writings based on human authors' expertise (Brown et al., 2020). As the user's vocabulary grows, more complex ideas are unlocked and presented to them as they would in a conventional classroom setting (Lu et al., 2021). During the Q&A session, a Generative Pre-trained Transformer 2 (GPT-2) was utilized (Lu et al., 2021). Both the development of the questions and the examination of the responses were responsibilities of this. The artificial intelligence was first fine-tuned to the instructors' specifications, and only after that did it generate the brief question for the class. In the end, it was applied as a benchmark in the assessment of projects submitted by students. If teachers do this, they may find it easier to introduce the topic, and it may also make it easier for them to assess the responses of their students. As was the case in the last scenario, the AI in this one picks up new information and skills as it progresses. In spite of this, AI's strengths could be used in the classroom, directing humans to learn more and allowing them to share what they have learnt with others. In the next paragraph, we will talk about some potential modifications that may be made to the educational system to make it more accessible to species that are not humans.

2.6 Preparing Students for Any Situation

Nothing in our universe exists in any other form, regardless of whether it is a physical entity, a digital object, or something completely different, such as artificial intelligence. They range from things that are inanimate, such as chairs, to things that are alive, such as plants. On the other hand, the vast majority of them are non-living things.

The internal circuitry of Internet of Things devices might be governed, for instance, by microprocessors and other sensors (Sohag & Podder, 2020). On the other hand, most of the uses of the Internet of Things (IoT) are restricted to working scheduling and collecting data from linked devices (Messaoud et al., 2020). Because it can only be accessed through a remote server in the cloud, it requires constant connectivity to the network (Baghban et al., 2022). In order to compensate for its low processing capability, the Internet of Things (IoT) needs to take advantage of the significantly more powerful capabilities available on remote cloud servers (Cárdenas et al., 2021).

Consistently, a significant portion of the public interacts with digital media on their mobile phones, tablets, and other portable electronic devices. At this time, non-fungible tokens (NFT) make it possible for digital goods to be both one-of-a-kind and produced by a particular individual or group (Dowling, 2022). On the NFT exchange, a unique token or address is provided for every digital suitable listed for sale (Rao & Clarke, 2020). The second component possesses artificial intelligence because it can mathematically model the natural world to get an understanding of that reality (Messaoud et al., 2020). Although humans, in contrast to inanimate or digital objects, cannot fully comprehend AI, they can benefit from it. Still, though artificial intelligence has made significant progress in recent years, even more research is required before it can live up to its promise of helping humans in a wide variety of fields (Gill et al., 2022 & Messaoud et al., 2020).

The excellent organization of our thoughts sets humans apart from the dead matter that makes up the rest of the cosmos (Gill et al., 2022). In most circumstances, human intelligence progression is only possible with the assistance of other individuals. One indication of the success of a teacher's instruction is if their students' written work improves while taking English as a Foreign Language classes (Castells et al., 2022 & Guo et al., 2021). Due to the limited amount of time allotted for schooling, teachers cannot provide students with support at any stage of their academic careers. This challenge could be conquered with the assistance of artificial intelligence, which uses pervasive technology and cloud services to offer students ongoing study support and overcome the aforementioned challenges. Several separate studies (Guo et al., 2021; Nguyen et al., 2020) There has been a significant amount of research on the use of AI to speed up educational processes and close the achievement gap. With the help of AI-powered grammatical checking software, students of English as a foreign language, for example, are able to participate in as much or as little writing practise as they want, whenever they want. Students of English as a Foreign Language (EFL) who make use of these strategies have a better chance of finding success while utilising AI in their lectures (Guo et al., 2021).

IoT devices can be taught using AI techniques analogous to those utilized. This is because AI has the potential to learn about its surroundings through the observation of both physical objects in the world and their digital representations in photographs. In an analogous manner to how AI will instruct the Internet of Things to do new activities, AI will also serve as a training role in developing the Internet of Things. During this time, there were no limitations imposed on the ways in which different items may communicate with one another or learn information from one another. Artificial intelligence (AI) and other forms of intelligence, such as technological devices, can teach something to any living thing, including humans, plants, animals, and even inanimate objects. The same way that EFL students can benefit from learning more about smart physical things by engaging with digital items, the same way that smart physical things can benefit from learning more about EFL students by interacting with digital products. The problem is that digital and physical objects cannot read human language directly. It is the root cause of the problem. Furthermore, human language comprehension in the Internet of Things based on natural language processing (NLP) will require more computational resources from a cloud server (Gladence et al., 2020). Due to the considerable amount of latency that this causes, the results of the computation will only be available for a short time.

Furthermore, earlier studies have suggested the use of edge computing, in which computer resources are placed close to the user or the IoT to shorten the amount of time needed for the connection (Baghban et al., 2022 & Gong et al., 2020). In addition to this, it is feasible to combine the computing capabilities of mobile devices with those of the edge nodes and employ them collaboratively. Computing on the move has the potential to use artificial intelligence, and more specifically, natural language processing, to construct edge computing that can interpret human language with the smallest amount of latency. It might be accomplished through the use of natural language processing. Instead of using servers in the cloud, the inference technique will use peripheral hardware located within the network (Gill et al., 2022 & Gong et al., 2020).

Edge computing implementations of on-device AI using TF-Lite and a pre-trained model, such as the mobile Bidirectional Encoder Representations from Transformers Robo-Sensei: The Robotics Sensei (BERT) model (Deriu et al., 2021; Sun et al., 2020) can enable Q&A sessions between AIs and humans without the need for any intermediate servers to facilitate the conversation. The end effect is that user requests receive instant responses from hardware and software that were empowered with AI and powered by edge computing. Because it is now possible to imbue inanimate objects with their very own sensors and transform them into "smart physical objects," there are now more ways than ever before in which these things might be utilized in our day-to-day lives. In other words, artificial intelligence now has the cognitive capabilities necessary to comprehend human beings. As a result, the term "smart physical objects" refers to devices connected to the Internet of Things and non-technical things such as houseplants and desks. It is feasible that one day, as a result of the probable application of edge computing with plants, plants may be able to comprehend human language and have conversations with humans in languages that are native to humans.

In the same way that a human brain requires a knowledge base associated with its characteristics before it can answer a question, an artificial intelligence (AI) programme running on a device that English students use as

a foreign language must also have such a knowledge base. The artificial intelligence that powers the device might one day be able to learn new abilities from other AI and other external sources (Lu et al., 2021). The ability of big language models such as OpenAI's GPT-3, which are examples of external AI, to process more information than AI embedded in a device makes them superior to embedded AI (Brown et al., 2020). Consequently, external AI can assist with human language comprehension and boost the understanding of AI already present on the device by supplying responses that will assist in expanding its body of knowledge.

Students of English as a foreign language can therefore benefit from increasing their lexical resources for the language, as well as from engaging in EFL learning practise, regardless of whether this is accomplished through the use of intelligent digital devices, intelligent physical items, or artificial intelligence. The ability to pick up new skills and information from one's surroundings is shared by all living organisms, including humans. Smart physical objects, for example, can gain a deeper awareness of their traits, functions, and benefits by learning from AI that exists outside them in order to obtain knowledge from AI that exists outside them.

In addition to attempting to make AI algorithms safer, people can reduce the risk posed by artificial intelligence (AI) by monitoring and analyzing the outcomes of the calculations that the system performs, as well as by doing so. In addition, the proliferation of new data architectures for the "data of everything" is contributed by the Internet of Things, edge computing, mobile devices, and AI algorithms (Radanliev & De Roure, 2022). When bringing in new types of data, it is imperative to consider the potential downsides of implementing AI in the classroom (Radanliev & De Roure, 2022). It is because efficient data orchestration and comprehensive data integration are essential for promoting learning. In addition, individuals should carefully consider the potential drawbacks of depending solely on AI for educational assistance.

3. Methodology and Study Population

Because the purpose of this study was to describe and analyze a phenomenon, the thoughts, and data surrounding it, the processes that comprise it, and the impacts it produces, a descriptive-analytical methodology was used. The study population comprises English as a Foreign Language (EFL) teachers working in a variety of universities in Saudi Arabia; the study sample size is equal numbers of male and female participants (45 total).

3.1 Study Tool

The initial version of the questionnaire for this investigation was composed of the following phrases, which were organized along two axes: (Examining the Role of AI in the English Language Learning Setting) and (Utilizing AI could facilitate the ELT process), with the second axis focusing on the challenges that are associated with the application of AI to the educational process (Because both students and teachers of EFL must interact with AI, AI may lead to apathy and a decline in motivation). On a scale of one to five, the Likert questionnaire has the following five possible responses.

Strongly agree, agree, neutral, disagree, strongly disagree

4. Results and Analysis

Results have been obtained through a shared questionnaire using an online link that leads to Google Forms.

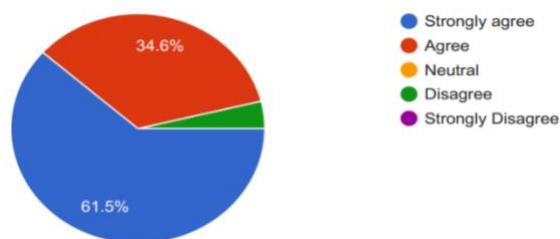


Figure 1: Artificial intelligence (AI) significantly promotes the language skills of EFL learners.

Based on the above statistical analysis, it is found that 61.5 % of the participants have strongly agreed that the use of artificial intelligence (AI) is crucial in helping English as a Foreign Language (EFL) students improve their linguistic abilities, and 34.6 % have agreed as well, whereas 3.9 % have chosen to disagree.

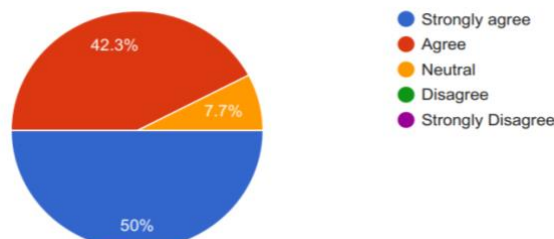


Figure 2: Utilizing AI could facilitate the ELT process.

According to the above figure, 50 % of the participants strongly agreed that utilising AI could facilitate the ELT process, and 42.3 % agreed, whereas 7.7 % preferred neutral.

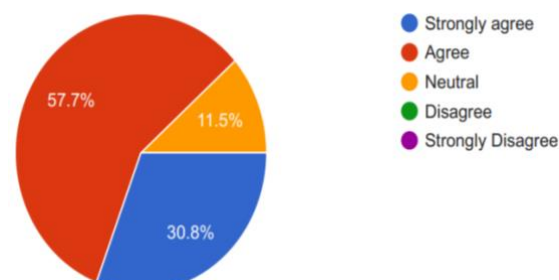


Figure 3: Integrating AI tools into ELT poses challenges to instructors and learners.

Due to the above statistical results, it is found that 30.8 % of the participants strongly agreed that both teachers and students face difficulties when using AI in English language training, 57.7 % agreed as well, whereas 11.5 % preferred neutral.

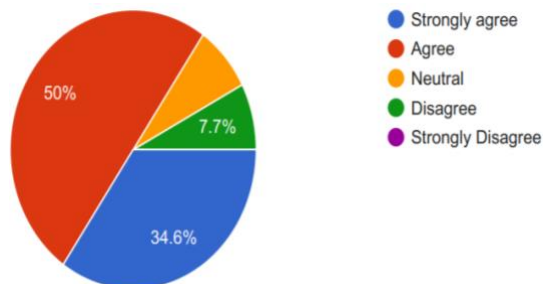


Figure 4: My professional development in computer and internet services is based on self-training.

According to the statistical results, 34.6 % of the participants strongly agreed with the statement that they have relied on self-study for all their education and experience with professional computer and Internet use, 50 % agreed, too, whereas 7.7 % disagreed, and 7.7 % remained neutral.

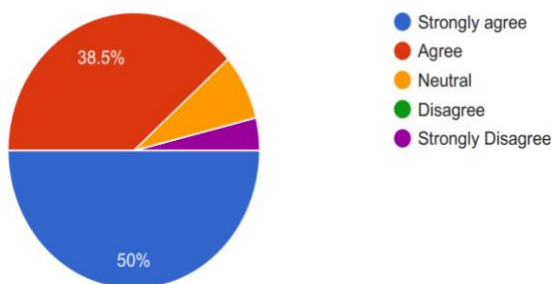


Figure 5: I believe that incorporating AI into the classroom encourages students to take an active role in their learning.

Based on the statistical results, it is found that 7.7 % of the participants have strongly agreed that since both EFL students and teachers must interact with AI, this could lead to apathy and a decline in motivation, and 30.8 % have agreed as well, while 11.5 % preferred to be neutral, 34.6 % have disagreed and 15.4 % have strongly disagreed with the statement.

4.1 Discussion

The instrument was carried out in the seven items of the study questionnaire, producing results that were practically unanimous in support or partially contradictory. This research adds to the existing literature, which largely agrees on a few key points, including the importance of AI in enhancing the language skills of EFL students and the potential benefits of using AI in the ELT process, as well as the importance of instructors' performance and learners' collaboration and enthusiasm in determining the degree to which these goals are achieved. However, educators often, especially those teaching English as a foreign language (EFL), need more input to make oral engagement as vital as possible. In other words, academics need better training to incorporate AI technology into their lessons.

Learning a new language can be challenging, but with the help of AI technology, instructors and students can interact more effectively in EFL classrooms, and students can spend less time learning the hard way. Using artificial intelligence, educators can help their EFL students develop their capacity for analysis, debate, and argumentation. Students' participation and performance in class could be significantly improved with the help of AI technology, especially in terms of students' oral communication skills. Although difficulties are expected, AI can help students succeed by emphasizing critical topics in their written or vocal communications.

5. Conclusions

As a result of the above figure, it is shown that 50 % of the participants have strongly agreed that they think that student engagement will improve with the introduction of AI into the classroom, and 38.5 % have agreed as well, whereas 8.5 % have selected to be neutral and 3 % have chosen to disagree strongly.

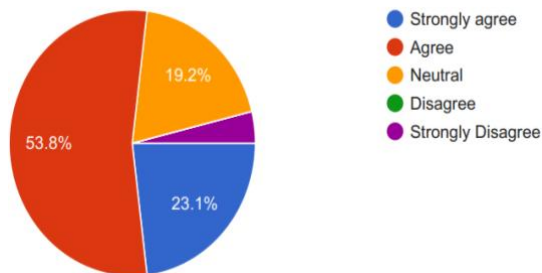


Figure 6: AI technology reduces the stress of trial and error in learning.

Based on the above figure, it is shown that 23.1 % of the participants have strongly agreed that the use of AI lessens the burden of educational trial and error, 53.8 % have agreed too, whereas 19.2 % have chosen to be neutral, and 3.9 % have chosen to disagree strongly.

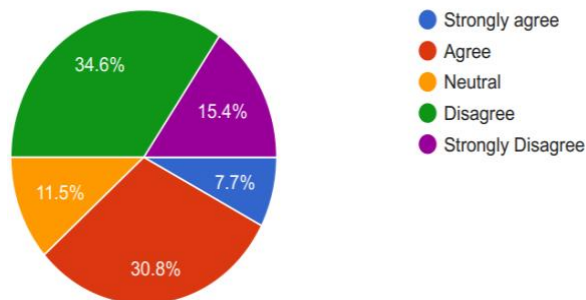


Figure 7: AI could cause boredom and a lack of desire to learn and teach EFL since both students and teachers work with machines.

Since the turn of the twentieth century, digital technology has been incorporated into several pedagogical models. There has been a beginning shift in the educational landscape as AI becomes more widely implemented. The focus of this study is the benefits of using AI in online classrooms to improve students' grasp of course material.

With the help of AI, education may reach new heights of excellence. A robust educational system can be developed in which instruction is more flexible and comprehensive using AI-assisted technology. AI-assisted technologies will help students acquire the information and promote their abilities sought after and required by today's technologically advanced world. The findings of this study showed congruent results for the perspectives of EFL experts on AI tools and the use of these tools to help language learning and teaching.

Finally, this study has reached the conclusion that AI plays an important role in the teaching and learning processes of EFL. AI has a positive impact on EFL in terms of facilitating pedagogical and learning procedures. However, training EFL instructors is required to implement AI technologies properly in language classrooms.

6. Recommendations

Through the results of the current study, the researchers recommend the following: Educating teachers and students about the value of AI technology in the classroom and how it can be used to achieve a wide range of objectives effectively. Training educators on how to implement AI-based tools into their curricula. Instruction of learners on the use of AI tools for learning. Artificial intelligence (AI) technology implementation in higher learning.

References

- Abu Ghali, M. J., Abu Ayyad, A., Abu-Naser, S. S., & Abu Laban, M. (2018). An intelligent tutoring system for teaching English grammar. *International Journal of Academic Engineering Research*, 2(2), 1 - 6.
- Adolphs, S., Clark, L., Dörnyei, Z., Glover, T., Henry, A., Muir, C., & Valstar, M. (2018). Digital innovations in L2 motivation: Harnessing the power of the Ideal L2 Self. *The system*, 78, 173-185. <https://doi.org/10.1016/j.system.2018.07.014>
- Amarasinghe, I., Michos, K., Crespi, F., & Hernández-Leo, D. (2022). Learning analytics support to teachers' design and orchestrating tasks. *Journal of Computer Assisted Learning*, 1 - 16. <https://doi.org/10.1111/jcal.12711>
- Baghban, H., Rezapour, A., Hsu, C. H., Nuannimnoi, S., & Huang, C. Y. (2022). Edge-AI: IoT Request Service Provisioning in Federated Edge Computing Using Actor-Critic Reinforcement Learning. *IEEE Transactions on Engineering Management*. <https://doi.org/10.1109/TEM.2022.3166769>
- Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., & Amodei, D. (2020). Language models are few-shot learners. *Advances in neural information processing systems*, 33, 1877-1901.
- Cárdenas, R., Arroba, P., & Risco Martín, J. L. (2021). Bringing AI to the edge: A formal M&S specification to deploy effective IoT architectures. *Journal of Simulation*, 1-18. <https://doi.org/10.1080/17477778.2020.1863755>
- Castells, N., Minguela, M., Solé, I., Miras, M., Nadal, E., & Rijlaarsdam, G. (2022). Improving Questioning-Answering Strategies in Learning from Multiple Complementary Texts: An Intervention Study. *Reading Research Quarterly*, 57(3), 879-912. <https://doi.org/10.1002/rrq.451>
- Chen, Y., Smith, T. J., York, C. S., & Mayall, H. J. (2020). Google Earth Virtual Reality and expository writing for young English Learners from a Funds of Knowledge perspective. *Computer Assisted Language Learning*, 33(1-2), 1-25. <https://doi.org/10.1080/09588221.2018.1544151>
- Chien, S. Y., Hwang, G. J., & Jong, M. S. Y. (2020). Effects of peer assessment within the context of spherical video-based virtual reality on EFL students' English-Speaking performance and learning perceptions. *Computers & Education*, 146, 103751. <https://doi.org/10.1016/j.compedu.2019.103751>
- Couto, S. M. (2016). Foreign Language Anxiety Levels in Second Life oral interaction. *ReCALL Journal*, 27(3).
- Cowie, N., & Alizadeh, M. (2022). The affordances and challenges of virtual reality for language teaching. *International Journal of TESOL Studies*, 4(3), 50-56.
- Deriu, J., Rodrigo, A., Otegi, A., Echegoyen, G., Rosset, S., Agirre, E., & Cieliebak, M. (2021). Survey on evaluation methods for dialogue systems. *Artificial Intelligence Review*, 54(1), 755-810. <https://doi.org/10.1007/s10462-020-09866-x>
- Dowling, M. (2022). Is non-fungible token pricing driven by cryptocurrencies?. *Finance Research Letters*, 44, 102097. <https://doi.org/10.1016/j.frl.2021.102097>
- Ebadi, S., & Ebadijalal, M. (2020). The effect of Google Expeditions virtual reality on EFL learners' willingness to communicate and oral proficiency. *Computer Assisted Language Learning*, 1-25. <https://doi.org/10.1080/09588221.2020.1854311>
- Fernández-Rfo, J. (2016). Student-teacher-content-context: Indissoluble ingredients in the teaching-learning process. *Journal of Physical Education, Recreation & Dance*, 87(1), 3-5. <https://doi.org/10.1080/07303084.2016.1110476>
- Gill, S. S., Xu, M., Ottaviani, C., Patros, P., Bahsoon, R., Shaghagh, A., ... & Uhlig, S. (2022). AI for next-generation computing: Emerging trends and future directions. *Internet of Things*, 19, 100514. <https://doi.org/10.1016/j.iot.2022.100514>
- Gladence, L. M., Anu, V. M., Rathna, R., & Brumancia, E. (2020). Recommender system for home automation using IoT and artificial intelligence. *Journal of Ambient Intelligence and Humanized Computing*, 1-9. <https://doi.org/10.1007/s12652-020-01968-2>
- Gong, C., Lin, F., Gong, X., & Lu, Y. (2020). Intelligent cooperative edge computing in the internet of things. *IEEE Internet of Things Journal*, 7(10), 9372-9382. <https://doi.org/10.1109/JIOT.2020.2986015>
- Guo, K., Wang, J., & Chu, S. K. W. (2022). Using chatbots to scaffold EFL students' argumentative writing. *Assessing Writing*, 54, 100666. <https://doi.org/10.1016/j.asw.2022.100666>
- Guo, Q., Feng, R., & Hua, Y. (2021). How effectively can EFL students use automated written corrective feedback (AWCF) in research writing?. *Computer Assisted Language Learning*, 1-20. <https://doi.org/10.1080/09588221.2021.1879161>
- Hamad, S., Tairab, H., Wardat, Y., Rabbani, L., AlArabi, K., Yousef, M., & Stoica, G. (2022). Understanding science teachers' implementations of integrated STEM: Teacher perceptions and practice. *Sustainability*, 14(6), 3594. <https://doi.org/10.3390/su14063594>
- Haristiani, N. (2019, November). Artificial Intelligence (AI) chatbot as language learning medium: An inquiry. *In Journal of Physics: Conference Series*, 1387(1), 012020. IOP Publishing. <https://doi.org/10.1088/1742-6596/1387/1/012020>
- Hong, Z. W., Huang, Y. M., Hsu, M., & Shen, W. W. (2016). Authoring robot-assisted instructional materials for improving learning performance and motivation in EFL classrooms. *Journal of Educational Technology & Society*, 19(1), 337-349.
- Hwang, W. Y., Hoang, A., & Lin, Y. H. (2021). Smart mechanisms and their influence on geometry learning of elementary school students in authentic contexts. *Journal of Computer Assisted Learning*, 37(5), 1441-1454. <https://doi.org/10.1111/jcal.12584>

- Hwang, W. Y., Nguyen, V. G., & Purba, S. W. D. (2022). A systematic survey of anything-to-text recognition and constructing its framework in language learning. *Education and Information Technologies*, 1-27. <https://doi.org/10.1007/s10639-022-11112-6>
- Jiang, R. (2022). How does artificial intelligence empower EFL teaching and learning nowadays? A review on artificial intelligence in the EFL context. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1049401>
- Kim, N. Y. (2016). Effects of voice chat on EFL learners' speaking ability according to proficiency levels. *Multimedia-Assisted Language Learning*, 19(4), 63-88.
- Kim, N. Y., Cha, Y., & Kim, H. S. (2019). Future English learning: Chatbots and artificial intelligence. *Multimedia-Assisted Language Learning*, 22(3), 32-53.
- Lai, K. W. K., & Chen, H. J. H. (2021). A comparative study on the effects of a VR and PC visual novel game on vocabulary learning. *Computer Assisted Language Learning*, 1-34. <https://doi.org/10.1080/09588221.2021.1928226>
- Lan, Y. J., Fang, W. C., Hsiao, I. Y., & Chen, N. S. (2018). Real body versus 3D avatar: The effects of different embodied learning types on EFL listening comprehension. *Educational Technology Research and Development*, 66(3), 709-731. <https://doi.org/10.1007/s11423-018-9569-y>
- Lotze, N. (2018). Goodbye to classroom teaching. Artificial intelligence in language learning. Translation: Chris Cave. Copyright: Goethe-Institut e. V., Redaktion Magazin Sprache.
- Luck, M., & Aylett, R. (2000). Applying artificial intelligence to virtual reality: Intelligent virtual environments. *Applied artificial intelligence*, 14(1), 3-32. <https://doi.org/10.1080/088395100117142>
- Lu, O. H., Huang, A. Y., Tsai, D. C., & Yang, S. J. (2021). Expert-Authored and Machine-Generated Short-Answer Questions for Assessing Students' Learning Performance. *Educational Technology & Society*, 24(3), 159-173.
- Matuk, C., & Linn, M. C. (2018). Why and how do middle school students exchange ideas during science inquiry? *International Journal of Computer-Supported Collaborative Learning*, 13(3), 263-299. <https://doi.org/10.1007/s11412-018-9282-1>
- Messaoud, S., Bradai, A., Bukhari, S. H. R., Quang, P. T. A., Ahmed, O. B., & Atri, M. (2020). A survey on machine learning in the internet of things: algorithms, strategies, and applications. *Internet of Things*, 12, 100314. <https://doi.org/10.1016/j.iot.2020.100314>
- Mohamed, H., and Lamia, M. (2018). Implementing flipped classroom that used an intelligent tutoring system into the learning process. *Computers & Education*, 124, 62-76. <https://doi.org/10.1016/j.compedu.2018.05.011>
- Mohammadzadeh, A., and Sarkhosh, M. (2018). The Effects of Self-regulatory Learning Through Computer-assisted Intelligent Tutoring System on the Improvement of EFL Learners' Speaking Ability. *International Journal of Instruction*, 11(2), 167-184. <https://doi.org/10.12973/iji.2018.11212a>
- Nagro, S. A. (2021). The Role of Artificial Intelligence Techniques in Improving the Behavior and Practices of Faculty Members When Switching to E-Learning in Light of the Covid-19 Crisis. *International Journal of Education and Practice*, 9(4), 687-714. <https://doi.org/10.18488/journal.61.2021.94.687.714>
- Nguyen, T. H., Hwang, W. Y., Pham, X. L., & Pham, T. (2020). Self-experienced storytelling in an authentic context to facilitate EFL writing. *Computer Assisted Language Learning*, 1-30. <https://doi.org/10.1080/09588221.2020.1744665>
- Nobrega, F. A., & Rozenfeld, C. C. D. F. (2019). Virtual reality in the teaching of FLE in a Brazilian public school. *Languages*, 4(2), 36. <https://doi.org/10.3390/languages4020036>
- Obari, H. (2020). The integration of AI and virtual learning in teaching EFL under COVID-19. In *ICERI2020 Proceedings*, 7866-7872. IATED. <https://doi.org/10.21125/iceri.2020.1740>
- Radanliev, P., & De Roure, D. (2022). New and emerging forms of data and technologies: Literature and bibliometric review. *Multimedia Tools and Applications*, 1-25. <https://doi.org/10.1007/s11042-022-13451-5>
- Radanliev, P., & De Roure, D. (2022). Advancing the cybersecurity of the healthcare system with self-optimizing and self-adaptive artificial intelligence (part 2). *Health and Technology*, 12(5), 923-929. <https://doi.org/10.1007/s12553-022-00691-6>
- Rao, A. R., & Clarke, D. (2020). Perspectives on emerging directions in using IoT devices in blockchain applications. *Internet of Things*, 10, 100079. <https://doi.org/10.1016/j.iot.2019.100079>
- Rau, P. L. P., Zheng, J., Guo, Z., & Li, J. (2018). Speed reading on virtual reality and augmented reality. *Computers & Education*, 125, 240-245. <https://doi.org/10.1016/j.compedu.2018.06.016>
- Repetto, C. (2014). The use of virtual reality for language investigation and learning. *Frontiers in Psychology*, 5, 1280. <https://doi.org/10.3389/fpsyg.2014.01280>
- Silvestru, C. I., Firulescu, A. C., Iordoc, D. G., Icoiciu, V. C., Stoica, M. A., Platon, O. E., & Orzan, A. O. (2022). Smart Academic and Professional Education. *Sustainability*, 14(11), 6408. <https://doi.org/10.3390/su14116408>
- Sohag, M. U., & Podder, A. K. (2020). Smart garbage management system for a sustainable urban life: An IoT-based application. *Internet of Things*, 11, 100255. <https://doi.org/10.1016/j.iot.2020.100255>
- Sun, Z., Yu, H., Song, X., Liu, R., Yang, Y., & Zhou, D. (2020). Mobilebert: a compact task-agnostic bert for resource-limited devices. *arXiv preprint arXiv:2004.02984*. <https://doi.org/10.18653/v1/2020.acl-main.195>
- Tai, T. Y., Chen, H. H. J., & Todd, G. (2020). The impact of a virtual reality app on adolescent EFL learners' vocabulary learning. *Computer Assisted Language Learning*, 1-26. <https://doi.org/10.1080/09588221.2020.1752735>
- Tulba, M. F. (2000). Computer and artificial intelligence, Modern Egyptian Office Press, Cairo.
- Wang, C. P., Lan, Y. J., Tseng, W. T., Lin, Y. T. R., & Gupta, K. C. L. (2020). On the effects of 3D virtual worlds in language learning-a meta-analysis. *Computer Assisted Language Learning*, 33(8), 891-915. <https://doi.org/10.1080/09588221.2019.1598444>
- Wang, Y. F., & Petrina, S. (2013). Using learning analytics to understand the design of an intelligent language tutor-Chatbot Lucy. *Editorial Preface*, 4(11), 124-131. <https://doi.org/10.14569/IJACSA.2013.041117>
- Xie, Y., Chen, Y., & Ryder, L. H. (2021). Effects of using mobile-based virtual reality on Chinese L2 students' oral proficiency. *Computer Assisted Language Learning*, 34(3), 225-245. <https://doi.org/10.1080/09588221.2019.1604551>
- Xu, Z., Kausalai (Kay) Wijekumar, Gilbert Ramirez, Xueyan Hu, and Robin Irey. (2019). The Effectiveness of Intelligent Tutoring Systems on K-12 Students' Reading Comprehension: A Meta-Analysis. *British Journal of Educational Technology*, 50(6), 3119-37. <https://doi.org/10.1111/bjet.12758>
- Yin, W. (2022). An artificial intelligent virtual reality interactive model for distance education. *Journal of Mathematics*, Vol. 2022, pages 1-7. <https://doi.org/10.1155/2022/7099963>
- York, J., Shibata, K., Tokutake, H., & Nakayama, H. (2021). Effect of SCMC on foreign language anxiety and learning experience: A comparison of voice, video, and VR-based oral interaction. *ReCALL*, 33(1), 49-70. <https://doi.org/10.1017/S0958344020000154>

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Appendix 1

The Questionnaire

Questionnaire Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Artificial intelligence (AI) plays a significant role in promoting EFL learners' language skills.					
2. Utilizing AI could facilitate the ELT process.					
3. Integrating AI tools into ELT poses challenges for both instructors and learners.					
4. My professional development in using computer and internet services is based on self-training.					
5. I believe that incorporating AI into the classroom encourages learners to take an active role in their learning.					
6. AI technology reduces the stress of trial and error in learning.					
7. AI could cause boredom and a lack of desire to learn and teach EFL since both learners and teachers deal with machines.					



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