

Article

The Adoption of AI for EFL Learning

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INTRODUCTION

English is the most widely spoken second language among non-native speakers worldwide. The environment for teaching and learning English as a foreign language (EFL) is undergoing significant changes with the growing use of Artificial Intelligence (AI) applications. As technology continues to evolve, actionable evidence is available to show how AI is becoming instrumental in supporting EFL learners and helping them improve their language skills, increase engagement in learning activities, and receive personalized feedback.

The purpose of this paper is to examine the approaches, sources, and strategies of using AI for the effective learning of EFL by non-native speakers (NNS). Section one begins with a basic definition of AI, its theoretical foundations, and general sources for AI learning. Section two examines the effectiveness of different AI approaches and their impact on EFL teaching and learning. And finally, Section three introduces some specific approaches of how AI can be used to enhance EFL learning while recognizing some challenges that are present in such technology adoption.

1 General Background

This section provides an overall background on how AI is defined and approaches that are used to describe the use of AI tools for EFL learning.

1.1 Artificial Intelligence Defined

Artificial Intelligence (AI) broadly refers to the ability of computers and machines to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and language translation (Encyclopedia Britannica, 2021). AI works by processing large amounts of data, learning patterns, and making predictions using algorithms and neural networks. Examples of the adoption of AI for EFL learning include a wide variety of adaptive learning platforms and language learning apps.

In terms of English education, AI includes the use of technological solutions that behave as a teacher to help students improve their English language skills. AI provides learning content to EFL learners just like a teacher would in different classroom contexts. The evolution of computer learning in the classroom began as computer-assisted language learning (CALL) in the 1960s to facilitate language learning for non-native speakers (NNS) of English (Sumakur et al., 2022). In the 1980s, early versions of Intelligent Tutoring

Systems (ITS) emerged with a focus on compassion and precision to provide systems that care for learners' needs through a desirable learning environment and collaboration (Sumakur et al., 2022).

The transition from CALL to ITS represents a shift from technology serving as a supplementary tool to becoming an integral part of the instructional process. While CALL primarily focused on providing digital resources, ITS aimed to replicate the adaptive and responsive nature of human instruction, laying the groundwork for the development of modern AI-driven platforms that offer real-time feedback and personalized learning pathways (VanLehn, 2011).

With the introduction of big data in the 21st century, AI is becoming instrumental through machine learning, Natural Language Processing (NLP), and voice recording to allow computers to use human language in language learning (Jiang, 2022). Even though teachers are ambivalent about using AI technologies in teaching EFL, AI is showing promising results in ensuring personalized learning, providing real-time feedback, and fostering student achievement with the use of individual feedback. Before exploring AI benefits in EFL, it is critical to understand the existing AI solutions and how they are aiding EFL learning in the classroom setting.

1.2 Automated Evaluation Systems

Automated Evaluation Systems (AESs) depend on big data and NLP technologies such as automatic speech recognition and other AI tools to assess various aspects of English language proficiency. This technology development has the potential of becoming a valuable approach for providing efficient and objective feedback to EFL students in a timely fashion.

In one context, AESs have been used to examine the data fed into the systems to provide automatic revision recommendations in EFL reading and writing (Jiang, 2022). Some examples of commercially available AESs include Criterion and Pigai which are known for bolstering writing accuracy, motivating learners to engage in more English writing practice, and revising their mistakes (Gao, 2021). In a similar fashion, tools such as English 60 Junior and Eye Speak are regaining popularity in improving oral proficiency, frequency of English use, and correct pronunciation while allowing educators to integrate

online evaluation with automatic response and grading to enhance real-time and immediate revisions (Jiang, 2022).

Despite the benefits associated with AESs, such automated systems generally still have inadequate quality comments on syntactic use errors, low speech recognition accuracy, and limited user-friendliness with EFL learners (Gao, 2021). As such, AESs are not yet able to entirely replace human EFL teachers in terms of personalized instruction or in establishing teacher-student relationships that will further improve EFL learning.

1.3 Neural Machine Translation Tools

Various types of AI tools are being used for language learning, including Neural Machine Translation tools (NMTs). NMTs are automated translation tools that help EFL learners improve their translation performance and address weaknesses associated with translation. According to Vanjani and Aiken (2020), Google Translate and Microsoft's Translator Bing (known as Copilot) are widely applied translation tools used in language education to evaluate performance and compare it from diverse perspectives. The tools are beneficial in promoting self-learning among EFL students, improving mastery of grammatical knowledge, and developing productive and receptive language skills, hence reducing language anxiety (Jiang, 2022).

These systems allow English input by typing or speaking, which helps with both productive English language skills. However, they are associated with reduced learners' motivation since they are designed for advanced L2 learners but not beginners seeking analytical language and awareness-raising tasks (Jiang, 2022). As such, using NMTs in the classroom can help improve students' English proficiency levels but may demotivate them due to their complexities and language level skills required to use them effectively.

2 Impact of AI on EFL Learning

This section discusses the impact of AI and AI tools on EFL learning. This includes the effect that adopting AI technology for EFL learning has on teacher motivation, learner motivation, and learner proficiency.

According to Hazaymeh et al. (2024), AI in EFL classrooms provides an engaging, effective, as well as productive learning experience where AI-powered applications like language learning software and chatbots enhance the teaching and learning process. As

such, students are increasing their awareness of EFL and motivation for successful learning. Jiang (2022) also recognized that AI technology in EFL instruction provides formative feedback that allows learners to make real-time adjustments to their English language learning. This in turn helps to enhance their language performance and enhance their English language skills. Of particular interest is how AI can assist EFL learners to improve their motivation, fluency, and overall English proficiency.

2.1 Impact on Teacher Motivation

Multiple studies have shown the potential benefits of using AI tools in EFL teaching and learning. In one study, Hazaymeh et al. (2024) examined EFL instructors' perspectives on the effectiveness of AI tools in EFL learning at universities in the UAE. The study used a quantitative approach through a survey of 46 EFL instructors to show that the instructors successfully used AI applications only when aligned with set goals to support learners' needs. The instructors reported relying on AI tools to perform specific classroom tasks, provide data-driven correction, and offer tailored instructions based on the learning needs of each learner.

The study also reported that EFL instructors praised AI tools for improving the teaching experience and processes in the classroom and increasing learners' participation. The study also found a direct correlation between instructors' teaching and their perspectives on using AI tools to improve learning in the classroom. More improvements in EFL classrooms were found to emerge from students' experiences with new technology which encouraged them to participate more in EFL classroom activities that utilized AI tools. The study provides insights into the inevitable use of AI tools in EFL classrooms and how instructors need to improve their perceptions of using them to achieve desired EFL learners' outcomes (Hazaymeh et al., 2024).

In another study, Sumakul et al. (2022) examined whether AI in EFL classrooms is a friend or an enemy by using teachers' perceptions of the classrooms while using them in learning activities. The researchers collected data using interviews with 4 EFL instructors in Indonesian universities to understand their perceptions of integrating AI into their instructional strategies. The instructors reported multiple benefits of using AI in EFL instruction, such as improved student engagement with the lessons' content and motivation to learn the English language effectively

In the same study, instructors also reported that AI is improving the relationship between students and instructors, making it instrumental in achieving learning outcomes. However, they noted that instructors must have the technological and pedagogical knowledge and skills to use AI to guide students effectively and motivate them to participate in EFL learning activities. The study cemented the positive perceptions associated with AI use in EFL classrooms by improving teaching and learning experiences for both teachers and students (Sumakul et al., 2022).

Marzuki et al. (2023) explored instructors' perceived benefits of AI writing tools on EFL learners. The qualitative study utilized a case study design and collected data using semi-structured interviews to understand how diverse AI writing tools are improving writing skills for EFL students. 4 EFL instructors in universities from Indonesia expressed their use of tools like Quillbot, ChatGPT, and Copy.ai to improve EFL learners' writing skills. The instructors reported that AI writing tools have revolutionized EFL instruction by improving learners' English writing skills and quality. Using AI tools has also improved the quality of English content since students actively engage with the tools while receiving real-time feedback on their progress, identifying mistakes, and receiving corrections to improve their learning outcomes. As such, the study provides substantial evidence that using AI tools in EFL instruction is beneficial in enhancing English language acquisition.

While the integration of AI and AI tools in EFL classrooms can help teacher motivation, it also brings forth new challenges, such as the potential for increased teacher workload during the initial implementation phase. Teachers may need to invest considerable time in learning to use new AI tools effectively and in adjusting their teaching strategies to accommodate AI's role in the classroom. These challenges underscore the importance of providing adequate training and support for teachers to ensure successful AI adoption.

2.2 Impact on Learner Motivation

Research on how AI affects EFL learners provides an understanding of how AI assists students in achieving learning outcomes in EFL classrooms. A study by Wei (2023) examined the impacts of AI use on learners' achievement, motivation, and self-regulated learning. The researchers applied a mixed-method design for two classes with 60 university students. The experimental group used AI tools during classroom instruction

with the control group using the traditional classroom instruction strategies. To determine AI effectiveness, the researcher conducted pre-tests and post-tests to examine students' improvement in grammar, vocabulary, and reading and writing skills. Students used self-reported questionnaires to examine their motivation in EFL and improvement in self-regulated learning.

Quantitative analysis of the results from the study found that students in the experimental group experienced tangible achievements in all English domains compared to those in the control group. In addition, the students improved their motivation, achievement, and self-guided learning when using the AI tools. The study shows that when used effectively, AI-mediated instruction improves students' motivation to participate in classroom activities and enhance their language acquisition (Wei, 2023).

In a separate study, Karatas et al. (2024) examined the influence of ChatGPT on foreign language learners through a qualitative case study. The researchers examined ChatGPT as an educational tool in foreign language processes in real-world classroom experiences to provide insights into its benefits and challenges. To achieve the objective, the study used 13 students from a preparatory class in a Turkish university providing foreign language classes. The instructors introduced ChatGPT into classroom activities for four weeks to aid their learning experiences and skill acquisition in foreign languages.

On analyzing themes from the conducted interviews, the study found that ChatGPT improved learners' classroom experiences while enhancing their writing, grammar, as well as vocabulary acquisition in foreign languages. In addition, learners increased their motivation and classroom engagement in different learning activities. The findings provide evidence that AI tools like ChatGPT can assist educators in improving students' knowledge acquisition in EFL learning (Karatas et al., 2024). Furthermore, AI tools that incorporate gamification elements, such as language-learning apps that reward progress with badges or levels, have been shown to increase student engagement by making learning more interactive and enjoyable (Dehghanzadeh & Jafarzadeh, 2002).

Just like instructors, students have diverse perceptions of using AI tools in their EFL learning activities. Darwin et al. (2023) conducted a study to determine EFL learners' perceptions of the benefits and limitations of using AI tools in EFL classrooms. The study utilized case studies and semi-structured interviews with master's degree students in an

Indonesian university to achieve the objective. The results showed that students embraced the role of AI in enriching their critical thinking skills through academic research and theory analysis.

On the other hand, results from the study found that AI tools lacked personalization due to echo chambers and lacked nuanced understanding because they are programmed to behave in a specific way. Despite the challenges, the students recognized that AI tools have the potential to encourage critical thinking in foreign language acquisition when managed effectively. As such, the findings show that educators can utilize AI's strengths to achieve maximum benefits for learners while anticipating the identified limitations through effective management interventions to foster critical thinking skills in EFL learners (Darwin et al., 2023).

2.3 Impact on Learner Proficiency

AI tools will aid English reading and writing skills for Japanese students if utilized effectively. According to Alshumaimeri and Alshememry (2024), AI-powered tools can foster oral English skills by improving students' ability to comprehend the language rules. AI-based techniques such as language bots and MT can enhance English skill development. For instance, English language teachers can instruct learners to communicate with AI bots to understand how to engage in a dialogue using the English language. Since AI bots respond to dialogue like a person, students will receive personalized responses depending on their requests, making it possible to receive real-time scores on their performance and progression while identifying areas for improvement.

Using ChatGPT is an exemplary tool that can achieve reading and writing skills for the students. Jasper AI and Jenni AI can also be beneficial in developing English vocabulary to use in writing English (Alshumaimeri & Alshememry, 2024). The benefits of using AI tools lie in increasing students' engagement with learning content and receiving automated responses on the mistakes made and related corrections. This will motivate learners to embrace continuous improvement in their English learning journey when they interact with the bots to increase their reading and comprehension skills.

In addition, the instructors should define specific learning goals to guide the AI on the tasks to perform to assist learners in achieving the goals. For example, argumentative

writing can help learners to understand the writing process using the English language while translation can help learners develop English vocabulary from their Japanese language. The instructors should also ensure that the AI provides automated feedback to show learners the level of English language acquisition.

3 Challenges of AI in EFL Learning

This section discusses some strategies and challenges to the adoption of AI for EFL learning. Adoption methods include the use of AI for specific skill training and blended learning.

3.1 Specific Learning Approaches

AI is currently used by EFL learners to learn a variety of specific English language skills. These include the use of AI to practice English pronunciation, writing and communication.

3.1.1 Use of AI to Practice English Pronunciation

AI pronunciation training is one of the pedagogical methods in foreign language education that educators can focus on to improve learners' foreign language acquisition. AI-powered tools are instrumental in aiding the pronunciation of words for effective communication. Vancova (2023) explained that using AI tools for pronunciation provides students with implicit feedback on how to improve their communication.

Educators can use computer-assisted pronunciation training in language learning to utilize automatic speech recognition technology. According to Vancova (2023), the technology allows for tailor-made training that is customized depending on students' learning needs to provide opportunities for exposure to and practice of the new language. They can do this by integrating AI into the traditional classroom or changing the instructional paradigm to exploit the benefits of technology fully.

Implementing such training will require instructors to have competencies in using the AI tools effectively. Vancova (2023) explained that instructors require technical, instructional, and ethical competencies when using AI technologies to instruct learners in a classroom setting. The use of these tools must also align with set instructional frameworks to ensure that students achieve desired educational outcomes. Thus,

pronunciation digital tools must not compromise learning outcomes but rather help learners improve their conversational skills using the English language.

Using the tools to achieve conversational skills in the English language will depend on multiple factors. First, the students should address their anxiety levels when learning a foreign language. Vancova (2023) explained that learners experience anxiety when receiving training on word pronunciation from teachers. However, using AI tools may alleviate the anxiety to facilitate faster learning and higher proficiency levels. In a traditional classroom, teachers use a lot of their time correcting students' errors, making learning a tedious task. AI tools present an opportunity for learners to receive automated personalized instruction without developing anxiety from making mistakes. As such, teachers will only be facilitators while the AI tools provide feedback and results on students' performance without judging them.

Students' willingness to communicate with the AI tools also determines how effective they will be in pronunciation training. Foreign language acquisition requires learners' commitment and engagement with the classroom content and pedagogies to realize the desired outcomes. According to Vancova (2023), students should actively engage with AI tools to increase their linguistic competence. The AI tools have conversational agents who can only utilize their human interaction skills when engaged directly by a real person.

These types of interactions with AI will provide a natural feel to EFL learners as if they are in a real classroom where they interact with teachers. Only through active engagement with the AI agents will the learners achieve pronunciation accuracy. However, students must also acknowledge the role of teachers when using AI to ensure that they follow the lesson plan to cover all the content areas effectively.

3.1.2 Use of AI to Practice English Writing

Students will benefit from the advantages of AI writing tools that traditional classroom instruction lacks. According to Song and Song (2023), AI provides a differentiated experience where students receive automated responses on their writing skills, such as coherence, grammar, as well as vocabulary to foster performance improvements. In the traditional classroom instructions, learners do not receive instant feedback, hence the lack of motivation to continue learning the language. In addition, learners can easily correct

their writing mistakes since the AI writing tools identify errors and provide recommendations on the right sentence structure and lexical errors (Song & Song, 2023).

On realizing their improvements, students will increase their motivation to engage with the AI assistant to improve their overall writing quality in EFL learning. Consequently, students will realize improved academic performance and conversational skills in the English language. For example, ChatGPT will improve students' writing capabilities from its ability to generate words and construct grammatically correct sentences that follow English language rules and structures (Song & Song, 2023).

When using AI tools, students will learn to create coherent written texts while receiving instant responses on the grammatical errors and their right corrections. Nonetheless, learners will achieve proficiency in English writing by understanding sentence structure, grammatical accuracy, and vocabulary development. Consistent practice applying these fundamental skills is essential for achieving fluency and communicating ideas effectively through written English.

3.1.3 Use of AI to Practice English Conversation

Japanese students will enjoy having chatbots as conversational partners with extensive knowledge of the English language with whom to converse and improve their communication skills. Learning foreign languages requires a level of creativity and collaboration with partners with better skills than the learner. AI tools like ChatGPT will create vocabulary games for students to learn new words while receiving feedback on their proficiency levels in specific topics (Liu et al., 2024). As a result, they will increase their language competence from the partnership. In addition, learners can use the tools outside the classroom setting, such as while at home or work, to practice what they have learned appropriately. For instance, Bing Chat will help learners supplement their English learning while at home when communicating with other people or reading English books to understand grammar and seek the meaning of difficult sentences as a way of improving their English proficiency.

3.2 Blended Learning Approaches

One effective strategy for the use of AI in EFL learning may include a blended learning approach that combines the use of AI tools with instructor led classes. Such a blended

learning program generally involves using AI tools in traditional classroom instruction to foster EFL acquisition.

One example includes the use of AI tools to improve English language skills among native Japanese students, such as comprehension and conversational skills. Instructors adopted a program using Google Home Mini and Amazon Alexa to increase Japanese learners' English proficiency while accounting for intercultural awareness. Students were able to learn multiple skills from using such AI tools, such as critical thinking, collaboration, conversational skills, and co-existence with modern technologies, which are instrumental in modern workplaces (Obari & Lambacher, 2019).

Three basic steps can be adopted to help educators effectively implement such a blended learning program:

- (1) Instructors will first integrate the identified AI tools into their classroom activities to ensure that the students understand how to use the AI tools in the proper context.
- (2) Students can then interact with the AI tools actively to practice specific listening, speaking, vocabulary, and writing tasks to develop the skills effectively. While practicing, students will receive feedback on their progress and corrections where they go wrong. The tools act as a learning environment to provide authentic learning experiences for students. While engaging with the content, students can receive instruction to ensure they use the AI tools effectively.
- (3) Students will present their experiences and progress to the classroom to determine the program's effectiveness in achieving learning goals. If the tools improve their learning experiences and performance, they will continue using them. If not, the teacher will identify related challenges to help students in using the tools more effectively.

As such, adoption of such a blended learning program will increase collaboration between students and their teachers to positively influence learning goals.

Adoption of AI-integrated learning tools can provide EFL learners with an interactive VR environment where they interact with the AI assistants as peers and instructors.

According to Wei (2023), AI learning tools provide a regulated learning environment where learners interact with it based on the learning content. Since collaboration is a pivotal requirement in foreign language learning, learners will have an opportunity to engage the AI systems with the direction of their instructors to increase their proficiency. For teachers to help students realize optimal learning outcomes, they must identify the right content that corresponds with the skills that learners seek to build to ensure intentional interactions in AI-empowered environments.

Educators will seek to develop collaborative skills among students first before utilizing AI tools in the learning environment. According to Fitria (2023), developing collaborative skills is fundamental in shaping the dynamics of how to utilize AI meaningfully to seek clarification and construct knowledge during the learning processes. Hsu et al. (2023) also recognized that learners' collaborative capabilities determine the quality of feedback received from the AI tools and its impacts on learning based on their effectiveness in interpreting and applying the provided feedback in learning practices.

3.3 Challenges to Adoption of AI (in EFL Learning)

Learning in the traditional classroom set-up addresses linguistics, cognitive, social, and emotional perspectives in students. On the contrary, using AI-enabled tools in EFL learning lacks the social and emotional elements in the learning process. According to Jiang (2022), AI tools lack the ability to identify students' emotions and moods while learning to know when to stop, continue, or halt a lesson to help students learn procedurally. In the classroom, teachers can tell when the students are tired, bored, or understand the content based on their responses. Based on the observations, teachers make informed decisions on how to progress with the lesson. Continuous use of AI tools will deny students' emotional connection with their teachers since an AI cannot analyze students' emotional status to address them accordingly.

It is also impossible to personalize AI tools based on each student's needs. According to Aljundi et al. (2019), AI tools have standardized settings to address specific functions such as writing, pronunciation, reading, and others and cannot be changed to suit every student's needs. Thus, instructors must use specific guidelines to ensure that the tools provide the necessary support to learners based on the lesson contents. The guidelines should address tool selection criteria, implementation strategies, accessibility

considerations, and methods for evaluating effectiveness in enhancing student learning and engagement with the specific course content. After all, if the tools were modified, they could be manipulated to provide the results that one wants. As such, their efficiency depends on the instructions provided.

From the teachers' perspectives, AI use is favorable when they have the knowledge and skills to use them in classroom instruction effectively. Sumakul et al. (2022) explained that less-experienced teachers experience challenges in using AI tools effectively, causing opposition to using them as learning tools. Lack of experience leads to poor execution of instructions and misunderstanding of responses and analytics to inform decision-making on the student's progress. Thus, more investment is necessary to train educators on the effective use of AI tools to improve instructional efficiency in classroom settings. This knowledge will boost educators' confidence, enabling them to guide students effectively and motivate them to use AI to enhance their EFL learning.

In addition to technical challenges, there are also ethical considerations that must be addressed when adopting AI in education. Issues such as data privacy, algorithmic bias, and the potential for AI to perpetuate stereotypes or unfair practices are critical (Floridi et al., 2018). Teachers should acknowledge the ethical implications of using AI among students, considering that AI engages in human-like interactions with learners. They should discuss potential biases, privacy concerns, and the importance of critical thinking to discern fact from fiction when engaging with AI. Fostering an understanding of AI's capabilities and limitations is crucial for responsible and ethical use in educational settings.

Relying solely on AI tools in EFL learning will limit students' creativity and innovative levels in the classroom. According to Wale and Kassahun (2024), AI technologies deny students creative thinking which is necessary for developing writing skills since they provide answers to every instruction provided. Heavy engagement with AI eliminates the opportunity for learners to engage in meaningful discourses with teachers and other students to foster their understanding of English language writing concepts and rules.

In short, instructors must seek to balance the use of AI tools with traditional classroom instruction strategies to encourage students to interact with the lesson content. This balanced approach aims to leverage AI's capabilities while ensuring students actively participate, critically analyze concepts, and develop essential skills through interactive

classroom activities and discussions. AI should complement, not replace, effective pedagogical strategies that foster deep learning and intellectual growth. Furthermore, the overdependence would cause overreliance on AI tools in writing skills rather than students seeking to develop their writing skills effectively.

CONCLUSION

The adoption of AI in EFL learning offers significant benefits, including enhanced teacher and learner motivation, personalized feedback, and improved language proficiency. However, these advantages depend on the effective integration of AI tools within the educational framework. Teachers play a critical role in guiding learners and ensuring that AI is used to complement, not replace, traditional teaching methods. The positive impact of AI, therefore, is closely tied to the preparedness and adaptability of educators in utilizing these technologies.

Looking forward, it is essential to address the challenges associated with the adoption of AI, particularly in terms of ethical considerations, data privacy, and the risk of overreliance on technology. Further research is needed to explore the long-term effects of AI on language learning and to develop strategies for overcoming the identified challenges. By balancing the innovative potential of AI with thoughtful implementation, educators can maximize the benefits while minimizing the risks, ultimately enhancing the learning experience for EFL students.

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