

Integrating Artificial Intelligence (AI) in the EFL Classroom: Benefits and Challenges

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Abstract

The integration of Artificial Intelligence (AI) in education, including English in the Foreign Language (EFL) classrooms, has been a topic of interest and debate. In fact, AI has the potential to transform language learning and teaching. By leveraging the power of AI, educators can provide personalized feedback, adaptive learning experiences, authentic resources, and collaborative opportunities for students. This investigation seeks to explore the perceptions of English as a Foreign Language (EFL) teachers, regarding the incorporation of Artificial Intelligence (AI) technologies in their classrooms. As the research focuses specifically on a group of EFL teachers from a private university in Chile who have demonstrated experience in integrating AI in their teaching practices. The sample size for this study consists of 12 EFL teachers who were purposefully selected based on their expertise and familiarity with AI technologies. By exploring the perspectives of these teachers, this research seeks to gain insights into the effectiveness, challenges, and potential benefits of AI integration in EFL education at the university level. The findings indicate that these teachers have positive perceptions towards the use of AI, recognizing its potential to enhance learning and teaching. The results also highlight the importance of considering students' motivation levels and teachers' technological and pedagogical competence when integrating AI into the EFL classroom. This research provides insights into the teachers' perceptions and sheds light on the considerations needed for effective implementation of AI technologies in EFL education.

Keywords: EFL teaching; AI technologies; Classroom integration; Student engagement.

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Introduction

Artificial Intelligence (AI) and its automation capabilities have the potential to revolutionize education. As technology continues to advance, it brings forth new challenges and demands for both educators and learners. While we are still grappling with the impact of Internet and Communication Technology (ICT) in our classrooms, we must now prepare ourselves for the transformative power of AI. In addressing the disruptive effects of AI in higher education, it is critical to emphasize the importance of teachers acquiring specific skills to navigate this changing landscape (Sumakul, 2019; Vera 2023a; Vera, 2023b). AI offers educators novel tools and resources that have the potential to reshape traditional classroom practices. This holds true across various subject areas, including English as a Foreign Language (EFL).

Artificial intelligence (AI) technology has permeated various aspects of education, offering innovative solutions to enhance the learning experience. The realm of education has witnessed significant advancements with the integration of artificial intelligence (AI) technology. Through extensive literature studies, it has become evident that AI has found applications in a multitude of key areas within education. According to Zhao & Nazir (2022), the role of Artificial Intelligence (AI) has significantly strengthened the development of innovative teaching and knowledge-sharing methods. AI has revolutionized the educational landscape by offering powerful tools and technologies that enhance teaching and learning experiences.

As a matter of fact, a large and growing body of literature has consistently highlighted the potential benefits of integrating Artificial Intelligence (AI) in language teaching and learning contexts. Numerous studies, including those by Gao (2021), Pikhart (2021), and Klimova *et al.* (2022), have provided compelling evidence supporting the positive impact of AI on language education. These studies have shed light on the various ways in which AI can enhance language learning experiences. AI-powered tools and applications have been shown to facilitate personalized learning, adaptive instruction, and intelligent feedback, catering to the individual needs and learning styles of students. By leveraging AI technologies, language instructors can offer tailored and targeted support, promoting more efficient and effective language acquisition.

In this context, this investigation seeks to explore the perceptions of English as a Foreign Language (EFL) teachers, regarding the incorporation of Artificial Intelligence (AI) technologies in their classrooms. As AI continues to advance and shape various sectors, including education, it is essential to understand how EFL teachers perceive and navigate the integration of AI tools and applications in their instructional practices.

Applications of IA Technologies in Education

Applications of AI technologies in education have rapidly expanded in recent years, offering innovative solutions to enhance teaching and learning experiences. The potential of AI in education is vast, encompassing various domains and benefiting both educators and learners. Here, we explore some key applications of AI technologies in the field of education.

- One significant application of AI technology is the automatic grading system, which streamlines the assessment process by leveraging machine learning algorithms to evaluate student assignments and provide timely feedback. This not only saves teachers valuable time but also ensures consistent and objective grading.

- Another aspect is the interval reminder, where AI-powered systems help students stay organized and manage their time effectively by sending reminders for deadlines, study sessions, or upcoming assessments. These reminders contribute to better time management skills and help students stay on track with their learning goals.
- AI technology also supports teachers in providing feedback to students. With the assistance of AI, teachers can access data-driven insights and analytics, enabling them to offer personalized feedback tailored to each student's needs. This targeted feedback fosters student growth and allows for more individualized instruction.
- Virtual teachers, another aspect of AI in education, offer an interactive and immersive learning experience. These virtual teachers utilize AI algorithms to engage with students, deliver lessons, and provide support, creating a dynamic and engaging learning environment.
- Personalized learning is another crucial application of AI in education. AI algorithms analyze student data, including learning preferences, strengths, and weaknesses, to develop customized learning paths. This approach ensures that students receive content and exercises tailored to their individual needs, optimizing their learning outcomes.
- Adaptive learning goes hand in hand with personalized learning, where AI systems continuously adapt the learning experience based on student progress and performance. Through real-time assessments and data analysis, adaptive learning platforms adjust the difficulty level, pacing, and content delivery to match each student's proficiency and learning pace.
- AI's integration with augmented reality/virtual reality (AR/VR) opens up new possibilities for immersive and experiential learning. AR/VR technologies allow students to explore virtual environments, conduct virtual experiments, and interact with simulated scenarios, fostering deeper understanding and engagement.
- Accurate reading is another area where AI technology has made significant strides. AI-powered tools employ natural language processing and machine learning techniques to analyze and comprehend text, enabling students to access accurate and detailed information from various sources.
- The intelligent campus is an emerging application of AI, utilizing smart technologies to enhance campus operations and services. AI-powered systems can optimize resource allocation, improve campus security, and streamline administrative processes, creating a more efficient and connected learning environment.

Lastly, AI has played a pivotal role in facilitating distance learning, particularly in the wake of the COVID-19 pandemic. AI-powered platforms enable remote teaching and learning by providing virtual classrooms, video conferencing capabilities, and interactive learning materials, ensuring continuity in education regardless of physical barriers.

However, despite the promise of personalized learning, researchers and teachers in the field of language education exhibit a certain level of ambivalence towards the use of AI technologies in the language classroom (Sumakul *et al.*, 2022). While many studies emphasize the potential benefits of incorporating AI in language learning, there are also concerns and reservations that need to be addressed.

On one hand, proponents of AI technologies argue that they can provide individualized learning experiences tailored to students' specific needs and preferences. AI-powered language learning platforms and applications can adapt to learners' proficiency levels, track their progress, and provide personalized feedback, ultimately enhancing their language acquisition journey. Additionally, AI-based virtual language tutors and chatbots can offer interactive and engaging conversations, allowing learners to practice their language skills in a supportive and non-judgmental environment.

AI tools used in EFL classrooms

AI offers innovative opportunities to enhance language learning experiences and provide personalized support for EFL students. AI tools are designed to assist teachers and learners in various aspects of language acquisition, including grammar, vocabulary, pronunciation, and speaking skills. These tools utilize machine learning algorithms, natural language processing, and other AI techniques to provide interactive and adaptive learning experiences.

Specifically, AI offers educators a wide range of novel tools and resources that hold the potential to reshape and enhance traditional practices in English as a Foreign Language (EFL) classrooms (Vera, 2023). With AI, teachers can leverage intelligent tutoring systems, automated language assessment tools, and virtual language assistants to create more personalized and interactive learning experiences for their students.

In addition to traditional grammar-focused apps, there are several other AI technologies that have revolutionized the way English is learned as a foreign language. These technologies offer a range of interactive and personalized learning experiences, enhancing various language skills. Here are some examples:

- **Language Tutoring Systems:** AI-powered tutoring systems provide learners with interactive lessons and practice exercises. These systems use natural language processing (NLP) algorithms to analyze learners' responses, offer feedback, and provide personalized recommendations for improvement. They can simulate conversations, provide pronunciation guidance, and offer real-time feedback on speaking skills.
- **Virtual Language Assistants:** Virtual language assistants, such as chatbots, provide learners with opportunities for language practice and conversation. These AI-driven assistants can engage in dialogues, answer questions, and offer suggestions for vocabulary and sentence structures. Learners can practice their speaking and writing skills through interactive conversations with these virtual assistants.

- **Speech Recognition Technology:** AI-powered speech recognition technology allows learners to practice their pronunciation and speaking skills. Learners can speak into a microphone, and the technology analyzes their speech, providing feedback on accuracy, fluency, and intonation. This helps learners identify areas for improvement and work towards more accurate pronunciation.
- **Language Learning Apps:** There are numerous AI-powered language learning apps available that offer comprehensive language courses. These apps use AI algorithms to adapt the learning content based on learners' performance and progress. They provide a variety of exercises, quizzes, and games to enhance vocabulary, grammar, listening, and reading skills. Some apps also incorporate augmented reality (AR) or virtual reality (VR) elements for an immersive language learning experience.
- **Intelligent Writing Tools:** AI technologies have also been applied to assist learners in improving their writing skills. Intelligent writing tools can analyze learners' written work, offering suggestions for grammar, vocabulary, and sentence structure. These tools can identify common errors, provide alternative word choices, and offer writing style recommendations, helping learners develop their writing proficiency.
- **Language Learning Platforms:** AI-powered language learning platforms offer comprehensive language courses that cover all language skills. These platforms use adaptive learning algorithms to customize the learning experience for each learner, providing targeted exercises, content, and assessments based on individual needs and progress. They may also incorporate gamification elements to enhance learner engagement and motivation.

Overall, these AI technologies provide learners with accessible, interactive, and personalized language learning experiences (Vera, 2023c). They offer immediate feedback, adaptability, and authentic practice opportunities, allowing learners to progress at their own pace and focus on areas that require improvement. By incorporating AI technologies into EFL learning, learners can benefit from enhanced language acquisition and a more engaging learning process.

Apart from the above-mentioned AI tools that can be used in the EFL classroom, Vera (2023), has identified the following AI technologies:

- **Duolingo:** Duolingo is a popular AI-powered language learning platform that offers interactive lessons and exercises for learning English as a foreign language. It utilizes AI algorithms to adapt to learners' proficiency levels, track their progress, and provide personalized feedback. The platform includes various language skills such as reading, writing, listening, and speaking, and incorporates gamification elements to make the learning process engaging and enjoyable.

- **Grammarly:** Grammarly is an AI-based writing assistant that helps learners improve their English writing skills. It analyzes written content and provides real-time feedback on grammar, spelling, punctuation, style, and clarity. The tool uses advanced AI algorithms to identify errors and suggest corrections, helping learners enhance their writing proficiency and accuracy.
- **Lingvist:** Lingvist is an AI-powered language learning platform that offers personalized language courses, including English as a foreign language. It uses AI algorithms to adapt the course content based on learners' language proficiency and learning patterns. Lingvist focuses on vocabulary acquisition and employs spaced repetition techniques to optimize learning efficiency. The platform also provides instant feedback and performance analytics to track learners' progress.
- **Rosetta Stone:** Rosetta Stone is a well-known AI-powered language learning software that offers comprehensive language courses, including English as a foreign language. It utilizes AI technology to provide interactive lessons, speech recognition, and pronunciation feedback. The software emphasizes immersive language learning through visuals, audio, and contextual exercises, allowing learners to develop their English language skills in a natural and engaging way.
- **ELSA Speak:** ELSA Speak is an AI-powered English pronunciation app designed to help learners improve their spoken English. The app uses AI algorithms to analyze learners' pronunciation and provide personalized feedback. It offers various practice exercises and provides real-time guidance to help learners develop accurate pronunciation and intonation.

These AI tools leverage advanced technologies to enhance the learning experience for English language learners. By incorporating AI algorithms and adaptive learning techniques, they provide personalized feedback, track progress, and create engaging and interactive language learning environment. Moreover, AI tools have the potential to assist teachers in extending their support to individual students, especially when faced with time constraints ((U.S. Department of Education, Office of Educational Technology, 2023). As educators, it is not uncommon to encounter situations where limited class time prevents teachers from providing personalized attention to each student. However, AI tools can help bridge this gap by offering additional support and resources tailored to the specific needs of students.

It is important to note that while AI tools can be valuable aids for teachers, they should not replace the role of educators. The human touch and expertise of teachers in understanding students' unique needs, emotions, and learning styles cannot be replicated by AI. AI tools should be seen as complementary resources that enhance teachers' instructional practices and enable them to better cater to the individual needs of their students.

Method

In this study, we employed qualitative research methods to gain a deeper understanding of the phenomenon under investigation. Qualitative research is characterized by its naturalistic approach, focusing on interpretation and meaning-making (Aspers & Corte, 2019; Vera, 2022). To gather and analyze data, we included interviews and literature review.

The literature review component of this study involved an extensive exploration of existing research and scholarly works related to the topic. This process allowed to synthesize and extract key insights from previous studies, which served as a foundation for this research. Literature reviews are valuable in providing an understanding of the evolution of knowledge, identifying sources of inspiration for policy-making, stimulating the generation of new ideas, and guiding research in specific fields.

Additionally, the study incorporated interviews as a means of collecting primary data. The researchers conducted these interviews using an online platform, specifically a Zoom meeting. This online format enabled remote communication and facilitated the participation of individuals from different locations. The interviews provided valuable qualitative data, allowing the researchers to gather in-depth insights, perspectives, and experiences related to the research topic.

By employing qualitative research methods such as literature review and interviews, the study aims to uncover rich and nuanced information, delve into the complexities of the subject matter, and gain a comprehensive understanding of the research topic. This approach offers valuable insights into the phenomenon under investigation and contributes to the body of knowledge in the field.

Interview questions:

- How have you incorporated AI technologies in your EFL classroom?
- How do you address ethical considerations related to AI technologies in your EFL classes?
- What advice or recommendations would you give to other EFL teachers who are considering incorporating AI in their classrooms?

Participants

Given the novelty of AI technology and the limited familiarity of EFL teachers with its applications, this study adopted a purposeful sampling approach (Thomas, 2022). Purposeful sampling involves deliberately selecting participants who can provide relevant insights and align with the objectives of the study. By employing purposeful sampling, the researchers ensured that the participants' experiences and perspectives on integrating AI in EFL classrooms would contribute valuable and meaningful data to the research.

The sample consisted of 12 faculty members from a private university, including 9 women and 3 men, with an average age of 46 years ($SD=9$). Among the participants, 4 held a PhD degree, accounting for approximately 33% of the sample. Additionally, 11 faculty members possessed a master's degree, signifying their strong educational background and knowledge in their respective fields.

It is worth noting that some of the faculty members in the sample had obtained certifications in AI tools. These certifications indicate their dedication to staying abreast of advancements in technology and their commitment to incorporating AI technologies effectively in their teaching practices.

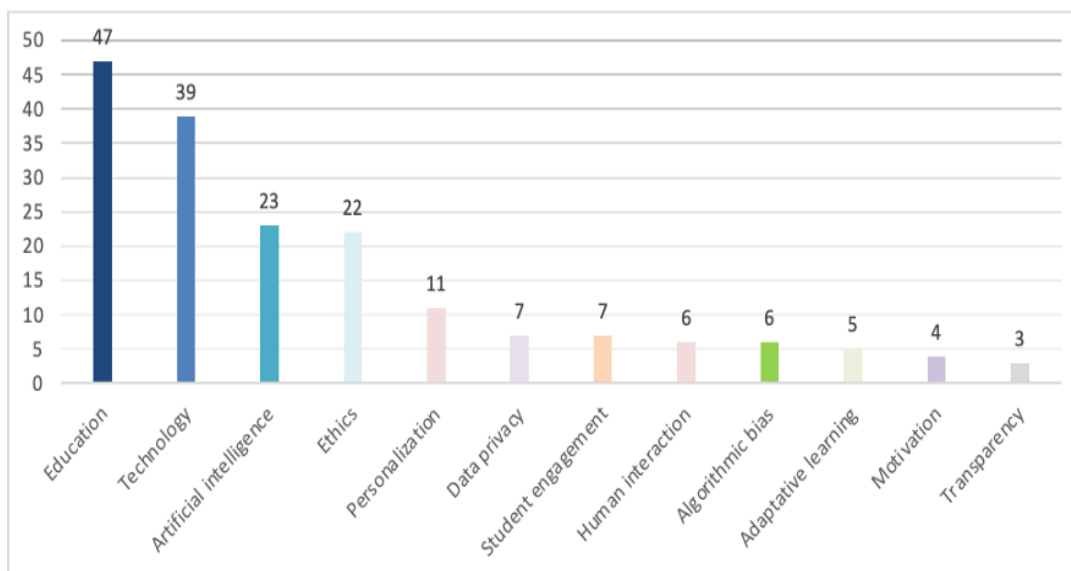
Results

In this section, we present the insightful findings obtained through the analysis of interview data utilizing coding techniques facilitated by the ATLAS.ti software (2022). Our primary objective was to explore the role of Artificial Intelligence (AI) in English language learning, specifically within the context of faculty members' experiences with AI. By conducting these interviews, our aim was to gain a deeper understanding of the impact of AI on various aspects of language acquisition, student engagement, and overall learning outcomes.

By employing the powerful features of ATLAS.ti, we were able to systematically analyze the interview data and extract meaningful insights. The software facilitated efficient organization and categorization of the data, enabling us to identify recurring themes and patterns within the responses provided by the faculty members. This rigorous coding process allowed us to draw robust conclusions and provide valuable insights into the effectiveness and potential of AI in English language learning within higher education settings.

Figure 1 visually represents the relationships and connections uncovered through our analysis, illustrating the complex interplay between AI, language learning, and various outcomes. The comprehensive examination of the data shed light on the diverse ways in which AI impacts teachers' utilization of AI tools, ethical considerations, and provided us with valuable recommendations for future implementation.

Figure 1: Identified codes on teachers' use of AI



Source: Own elaboration

Based on the results of the interview analysis of informants, we obtained four relevant subjects in this study. The four points of discussion are spelled out as follows:

- **Education:** Education is as a transformative journey that equips students with the necessary knowledge, skills, and values to succeed in a globalized world.
- **Technology:** Technology is viewed as a powerful tool that enhances teaching and learning experiences
- **Artificial intelligence:** Artificial Intelligence (AI) is as a cutting-edge technology that enables machines to learn, reason, and perform tasks traditionally requiring human intelligence.
- **Ethics:** Ethics is considered as a moral framework that shapes individuals' behavior and decision-making in educational contexts.

Through the interviews, we gained valuable insights into how AI technologies are integrated into English language learning, the challenges and opportunities they present, and the ethical considerations that arise. Furthermore, we discovered valuable advice and recommendations from the faculty members who shared their experiences and expertise in incorporating AI into their teaching practices.

The interviews conducted for this study were facilitated through Zoom sessions, an online communication platform. Given the nature of the research and the geographical dispersion of the participants, conducting the interviews remotely was a practical and efficient approach. Using Zoom as the medium for interviews allowed us to overcome geographical barriers and connect with participants regardless of their location. It provided a convenient and accessible means of communication, enabling us to engage with a diverse group of individuals in real-time.

The Zoom sessions offered a collaborative and interactive environment, resembling face-to-face interviews to a certain extent. Through video conferencing, we were able to establish visual and auditory connections, which enhanced the quality of the interviews. It also provided a platform for non-verbal cues and expressions, allowing for a more nuanced understanding of the participants' perspectives. Below we present a selection of opinions from this group of faculty members:

- *In terms of learning outcomes, I have observed noticeable improvements in students' language proficiency and fluency. The AI chatbot provides instant feedback on grammar, vocabulary, and sentence structure, allowing students to correct their mistakes in real-time.* Fac-03
- *AI technologies have greatly improved student engagement and learning outcomes in my EFL classes, particularly through the use of adaptive learning platforms.* Fac-07
- *I have witnessed increased motivation as students find the content more relevant and tailored to their needs.* Fac-02
- *To EFL teachers considering the incorporation of AI in their classrooms, I would recommend exploring different AI tools and applications that align with their teaching goals and students' needs.* Fac-11
- *AI technologies have had a significant impact on student engagement and learning outcomes in my EFL classes, particularly using AI-powered language analysis tools.* Fac-01

- *Ethical considerations related to AI technologies are of utmost importance in our EFL classes. To address these considerations, we ensure that the AI tools and applications we use are built on ethical principles and adhere to data privacy regulations. Fac-04*
- *I have utilized AI-driven virtual language assistants like Google Assistant and Amazon Alexa in my EFL classroom. These assistants can engage in conversations with students, answer their language-related questions, and provide pronunciation guidance. Fac-08*
- *We emphasize the responsible use of AI in language learning. We discuss with students the importance of critical thinking and evaluating the information provided by AI tools. Fac-12*
- *The interactive nature of the AI-powered pronunciation tools has increased student engagement and motivation to improve their pronunciation. Students appreciate the accuracy of the feedback and the ability to track their progress over time. Fac-05*

Discussion

The findings of this study shed light on the integration of Artificial Intelligence (AI) in English language learning and provided valuable insights into its effectiveness and potential in higher education (Vera, 2023). The interviews conducted with faculty members revealed various perspectives and experiences related to the use of AI in language acquisition, engagement, and overall learning outcomes.

One important aspect that emerged from the interviews was the ambivalence among researchers and teachers regarding the use of AI technologies in the language classroom. While AI promised personalized learning and showed potential benefits in language learning, there were still concerns and reservations among educators (Sumakul, *et al.*, 2022). This ambivalence could be attributed to factors such as the novelty of AI technology and the need for further exploration and understanding of its implications in educational settings.

Another important aspect dealt with ethical considerations related to AI in language learning. Issues such as data privacy, algorithmic bias, and the ethical use of AI tools and applications were raised. The importance of ensuring transparency, fairness, and accountability in the design and implementation of AI technologies in education was emphasized. This group of faculty members expressed the need for ethical guidelines and professional development opportunities to navigate these ethical considerations effectively.

Conclusion and recommendation

The integration of AI technologies in the EFL classes of this group of faculty members has a transformative effect on student engagement and learning outcomes. The personalized nature of AI tools, the immediate feedback they provide, and the interactive learning experiences they offer have resulted in enhanced student motivation, improved language proficiency, and increased confidence in using English.

When it comes to addressing ethical considerations related to AI technologies in EFL classes, this group of teachers takes a proactive approach, prioritizing key aspects such as student privacy, transparency, and critical thinking. Recognizing the potential risks and implications of AI, they emphasize the importance of creating a responsible and ethical use of these technologies in the classroom.

One of the primary concerns for these teachers is ensuring student privacy. They advocate for clear guidelines and protocols to protect students' personal data and ensure that AI tools and applications used in the classroom adhere to strict privacy standards. By implementing measures such as data encryption, secure storage, and limited access to student information, they strive to maintain the confidentiality and security of student data.

Transparency is another crucial aspect addressed by this group of teachers. They believe in providing students with a clear understanding of how AI technologies are being used in the classroom, including the data being collected, the algorithms employed, and the potential implications of using these technologies. By fostering open and honest communication, they empower students to make informed decisions and develop a critical awareness of AI's impact on their learning process.

Critical thinking is also a key focus when discussing ethical considerations. These teachers actively engage students in discussions about the ethical implications of AI, encouraging them to question and analyze the biases, limitations, and potential consequences associated with AI technologies. They promote a culture of inquiry and reflection, encouraging students to think critically about the role of AI in their language learning journey and its broader societal impact.

In general, these teachers place student privacy, transparency, and critical thinking at the forefront of their approach to addressing ethical considerations related to AI technologies in EFL classes. By prioritizing these principles, they aim to create a learning environment that not only harnesses the benefits of AI but also ensures responsible and ethical use that aligns with the best interests of their students.

Finally, when considering the integration of AI in EFL classrooms, our recommendation would be to approach it with an open mind and a willingness to explore new possibilities. Begin by researching and experimenting with different AI tools and applications that align with your teaching objectives. Take the time to learn how to effectively incorporate these technologies into your lessons and activities. Seek support and collaborate with colleagues who have experience with AI in language learning. It's important to involve students in the process by explaining the purpose and benefits of AI technologies and encouraging their active participation and feedback. Emphasize the importance of using AI as a tool to enhance learning rather than a replacement for human interaction. Finally, stay updated on the latest advancements in AI and continuously reflect on its impact on student engagement and learning outcomes to refine your teaching practice.

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