

CHALLENGES IN USING ARTIFICIAL INTELLIGENCE TO ENHANCE ORAL PRODUCTION IN ENGLISH LANGUAGE TEACHING

Desafíos en el uso de la inteligencia artificial para mejorar la producción oral en la enseñanza del inglés

Desafios no uso da inteligência artificial para melhorar a produção oral no ensino da língua inglesa

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ABSTRACT

Introduction: Technology transforms the classroom on a daily basis into interactive spaces based on the constant flow of information and communication it offers. The virtual classroom and artificial intelligence (AI) are indicators of interactivity, flexibility, and diversity. They open up a wide spectrum of possibilities to improve the process of learning and mastering new languages. This research focuses on the use of AI in learning English as a second language. Materials and methods: A qualitative approach is used, based on exploratory and interpretive documentary analysis of research published in databases such as Scielo and Latindex. The research sample is made up of secondary sources corresponding to the works reviewed on the topic of interest of this work. Given the novelty of AI, the time period of validity or updating of research in the last 7 years (2019-2025) was reduced. For the documentary analysis, content analysis was used, a strategy in accordance with the type of design of this article. Results: The most relevant results related to AI and the teaching-learning of English or a second language show that there is no specialization of works on the subject. These are experiences of designing proposals and isolated applications of AI such as virtual reality and other benefits of its use. Discussion: AI and big data are contributing to education and training projects, while providing resources and data-based decision-making. Conclusions: The impact of AI, which is increasing over the years, justifies the demand for scientific and educational research to obtain benefits in the teaching-learning of English or a second language and to reduce the counterproductive or collateral effects of these.

Keywords: artificial intelligence, teaching English, oral production of English.

RESUMEN

Introducción: La tecnología transforma el aula a diario en espacios interactivos basado en el flujo constante de información

y comunicación que ofrece. El aula virtual y la inteligencia artificial (IA) son indicadores de interactividad, flexibilidad y la diversidad. Con ellos se abre un amplio espectro de posibilidades para mejorar el proceso de conocer y dominar nuevos idiomas. Esta investigación se centra en el uso de IA en el aprendizaje de inglés como segunda lengua. Materiales y métodos: Se utiliza un enfoque cualitativo, basado en el análisis documental de tipo exploratorio e interpretativo de investigaciones publicadas en bases de datos como Scielo y Latindex. La muestra de investigación la constituyen las fuentes secundarias correspondientes a las obras revisadas sobre la temática de interés del presente trabajo. Dada la novedad de la IA se redujo el espacio temporal de vigencia o actualización de investigaciones en los últimos 7 años (2019-2025). Para el análisis documental se empleó el análisis de contenido, estrategia acorde al tipo de diseño de este artículo. Resultados: Los resultados más relevantes relacionados con la IA y la enseñanza-aprendizaje del idioma inglés o segunda lengua arrojan que no se observa especialización de obras sobre la temática. Se trata de experiencias de diseño de propuestas y aplicaciones aisladas de la IA como realidad virtual y otros beneficios de su uso. Discusión: La IA y el big data están contribuyendo en proyectos de educación y de formación, a la vez que proporcionan recursos y toma de decisiones basada en datos. Conclusiones: El impacto que tiene la IA que se acrecienta con los años justifica la demanda de investigaciones científica y educativas para que se obtengan beneficios en la enseñanza-aprendizaje de inglés o una segunda lengua y se reduzcan los efectos contraproducentes o colaterales de los mismos.

Palabras clave: inteligencia artificial, enseñanza del inglés, producción oral del inglés.

RESUMO

Introdução: A tecnologia transforma diariamente a sala de aula em espaços interativos baseados no fluxo constante de informação e comunicação que ela oferece. A sala de aula virtual e a inteligência artificial (IA) são indicadores de interatividade, flexibilidade e diversidade. Elas abrem um amplo leque de possibilidades para melhorar o processo de aprendizagem e domínio de novos idiomas. Esta pesquisa se concentra no uso de IA no aprendizado de inglês como segunda língua. Materiais e métodos: Utiliza-se uma abordagem qualitativa, baseada na análise documental exploratória e interpretativa de pesquisas publicadas em bases de dados como Scielo e Latindex. A amostra da pesquisa é composta por fontes secundárias correspondentes aos trabalhos revisados sobre o tema de interesse deste trabalho. Dada a novidade da IA, o prazo para que a pesquisa seja válida ou atualizada foi reduzido nos últimos 7 anos (2019-2025). Para a análise documental, utilizou-se a análise de conteúdo, estratégia condizente com o tipo de delineamento deste artigo. Resultados: Os resultados mais relevantes relacionados à IA e ao ensino-aprendizagem de inglês ou de uma segunda língua mostram que não há especialização de trabalhos sobre o tema. São experiências em desenho de propostas e aplicações isoladas da IA como realidade virtual e outros benefícios de seu uso. Discussão: IA e big data estão contribuindo para projetos de educação e treinamento, ao mesmo tempo em que fornecem recursos e tomada de decisões baseadas em dados. Conclusões: O impacto da IA, que vem aumentando ao longo dos anos, justifica a demanda por pesquisas científicas e educacionais para obter benefícios no ensino-aprendizagem do inglês ou de uma segunda língua e reduzir os efeitos contraproducentes ou colaterais disso.

Palavras-chave: inteligência artificial, ensino de inglês, produção oral em inglês.

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INTRODUCTION

Language learning has always been a challenge for students and English as a L2 is one of the most in-demand languages in the world. Technology transforms the classroom on a daily basis into interactive spaces based on the constant flow of information and communication it offers. The virtual classroom and artificial intelligence (AI) are indicators of interactivity, flexibility and diversity. They open up a wide spectrum of possibilities to improve the process of learning and mastering new languages. One of the most promising applications for this purpose is smart tutoring. It consists of advanced algorithms to provide personalized feedback, identify specific areas for improvement and adapt learning content according to the individual needs of students (Chicaiza et al., 2023).

Therefore, learning a second language, such as English, directly benefits from information and communications technologies (ICTs). There are previous works related to this topic, since AI allows learning paths to be personalized, based on the capabilities of each student, and facilitates the creation of management system spaces (Raffone, 2022).

Han *et al.* (2023) indicates that, in the context of pedagogical practices, speaking is vital for the development of language skills in students. Likewise, he expresses that English teaching programs should be proposed in such a way that they allow oral practice to be encouraged, so that, in this way, the student's fluency in speaking in the language can be built, supported by confidence. In addition to this, speaking is considered an assessment tool to assess the level of linguistic competence of students. Therefore, the development of speaking is considered one of the most important skills in the acquisition of a second language.

This paper addresses the importance of AI in the educational framework and in the teaching-learning process of the English language. UNESCO is promoting AI technologies, with a view to fulfilling the Education 2030 Agenda, to guarantee an educational context of inclusion and equity adapted to these times. Always keeping in mind that technologies are “a means, not an end in themselves” (Martínez Uribe, 2008).

Educational gamification is integrated with artificial intelligence, as an application that allows the reinforcement of learning in a more fun way, with improvements in cognitive skills, encouraging activities to improve meaningful learning (García, 2022). This enables more autonomous students to seek new opportunities to learn from more active models in which they play a greater role (Krstić, 2022).

The potential of AI does not go unnoticed and the opportunities it offers are being exploited. Therefore, AI in Education as a multidisciplinary field of research integrates methods and tools to identify knowledge patterns, key concepts, themes, work groups and future trends in the teaching-learning of a foreign language such as English or L2.

This work pays tribute to meaningful learning that enables oral competence, which is the main objective for many L2 learners. For this reason, some authors have presented models of strategies with their respective stages of foundation, immersion and oral production. In the latter, the benefits of AI for video production and oral communication in general can be seen (Council of Europe, 2020).

The use of artificial intelligence is increasingly present in higher education classrooms around the world. In this regard, Filtria (2021) states that “AI provides a wide variety of developments in foreign language education with the exponential development in natural language processing and technologies to cope with big data” [AI provides a wide variety of developments in foreign language education with the exponential development of natural language processing and technologies to deal with large volumes of data (Gayed, 2022)] (p. 215). That is, AI can adapt not only to users' speech but also to text patterns, whether vocabulary or even challenges, but ultimately giving rise to personalized teaching methods that suit each student.

MATERIALS AND METHODS

This research focuses on the use of AI in the learning of English as a second language. A qualitative approach is used, based on exploratory and interpretive documentary analysis of research published in databases such as Scielo and Latindex. The exploratory research is based on a review of the literature, while the interpretive research focuses on achieving an understanding of the changes that are made thanks to AI to improve oral production in the teaching of English as a second language. The sample used was 50 students from the Polytechnic School of Chimborazo, Ecuador, out of a population of 120 students.

The research sample is made up of secondary sources corresponding to the works reviewed on the topic of interest of this work. Given the novelty of AI, the time period of validity or updating of research in the last 7 years (2019-2025) was reduced. And for the documentary analysis, content analysis was used, a strategy in

accordance with the type of design of this article.

To achieve the project objectives, pedagogical and technological strategies based on current research in education and educational technology on references involving the influence of AI on L2 learning have been carefully selected. These strategies are designed to improve students' linguistic and pedagogical skills, fostering an interactive, collaborative and motivating learning environment. Another strategy used in the project is assessment through questionnaires, which allows collecting students' perspective on their educational experience. In this case, the project teacher has designed a form with several Likert-type scales to assess students' level of satisfaction, motivation and interest regarding the use of AI as a teaching resource.

Teachers completed the form in the last session, assessing aspects such as the amount of language they were exposed to compared to a standard English class, the frequency with which they used oral production, their performance during the subject and group work, among others. The results obtained, which will be explored in section three, have served to help the teacher adjust and improve the design and implementation of the project, adapting it to the needs and preferences of the students.

RESULTS

The most relevant results related to AI and the teaching-learning of English or a second language show that there is no specialization of works on the subject. These are basically experiences in the design of proposals and isolated applications of AI such as virtual reality and other benefits of its use. Other works are reviews of studies, essays and reports.

There has been an increase in interest and treatment of the subject as the years go by, up to the present day. As of 2020, the use of AI for teaching a second language is a reflection of its usefulness as a teaching resource. The trend is for this type of research to increase and deepen. Regarding the educational stages, there is a predominance of the use of AI in teaching and skills of a second language at the University, since it is assumed that the risks of its use are more controlled. There seems to be some resistance to the use of AI to teach English to the youngest children.

AI improves speech recognition and machine translation skills, making it easier to practice pronunciation and listening comprehension, as well as quickly and accurately translate texts in real time. These applications help students develop stronger language skills and overcome communication barriers in learning English (Álvarez Vega *et al.*, 2020). In addition to the smart tutoring system, we can also mention conversational chatbots, voice recognition, machine translation, personalization and adaptability; in addition to natural language processing models and the expansion of knowledge and cultures in the English language (Chicaiza et al., 2023).

The integration of AI tools revolutionizes the teaching task within the project, facilitating the creation of maps and much more efficient oral production in L2. This optimization allows for an improvement in the academic results of the students, as evidenced by the partial results obtained from a questionnaire applied to two of the groups. It is important to note that these results are preliminary and it is hoped to complement them with data from future editions and groups to obtain a more complete view of the academic impact of the project.

Table 1 shows the improvement in English listening comprehension throughout the course with the implementation of AI and its various options ranging from tutoring to videos that simulate real conversations.

Of a total sample of 50 students, 100% of them reported that AI improves this learning skill in the classroom. In terms of oral expression, 90 % of the sample stated that they perceived the benefits of using AI, and finally, interpretation, with 42 students agreeing that the applicability of AI positively influences the learning of this skill.

Table 1 The improvement in English listening comprehension throughout the course with the implementation

	Comprehension	Oral expression	Interpretation
Number of students who benefited from using AI	50	45	42

The overall results indicate that the students selected as a sample positively value the effort made and the improvement in oral comprehension, objective number two of the subject. In addition, a positive assessment is observed of the use of spoken English during classes, which is aligned with objectives one, two and four (active participation, oral communication and development of multilingual competence). When breaking down the satisfaction and performance data, it is noted that the students' general perception of the implementation of AI for L2 is very positive. Students appreciated the pedagogical and technological innovation, which is reflected in the high score obtained in the satisfaction surveys. This positive attitude suggests that the methods and tools used are not only effective for learning English, but also attractive and motivating for students.

The improvement in listening comprehension is particularly noteworthy. Students reported greater ease in following stories and instructions given in English, indicating that the interactive, narrative-based approach has been effective. Furthermore, the increase in oral production shows that students are more willing and able to express themselves in English, which is a crucial indicator of their linguistic progress. A relevant aspect is the impact on students' confidence. The data shows that students feel more confident when using English. This improved confidence is crucial not only for academic performance, but also for their personal and social development. The use of role-playing games and generative AI have created a learning environment that allows students to experiment and practice without fear of error, which is important for learning a foreign language.

DISCUSSION

Regarding the treatment of AI and ICTs, there are several authors who confirm their support for the specific needs of each student and for the development of learning in general (Zuupardo et al. 2017, 2019; Gallardo et al. 2020, 2021; Rodríguez et al. 2020, 2022). They play a fundamental role as mediators in the didactic process (Hernández et al., 2019), transforming the way in which knowledge is accessed, interacted with, and taught-learned in the educational environment.

AI and big data are contributing to education and training projects, while providing resources and data-driven decision-making (García, 2022). A way to contribute to the personalization of second language training and education from the point of view of the needs and learning pace of each student.

Nivela et al., 2020 consider that AI plays a crucial role in simplifying the understanding of concepts, content and procedures, which contributes to the learning process of students.

According to Vázquez-Cano (2021), 21st-century pedagogy, like any discipline, must adapt its principles to the new social and technological realities of the moment, and seek solutions and proposals that ultimately aim to improve teaching-learning processes for the development of skills and knowledge that students need to achieve professional and personal success. It should be noted that learning a second language such as English is one of the aspirations that impact education.

AI-based conversational chatbots prove to be useful in language learning as they offer learners the opportunity to practice their English conversation skills in an interactive and realistic environment. These can simulate conversations with native speakers, provide instant feedback, and provide constant and accessible practice (Chicaiza et al. 2023).

Despite the positive perception, responses on the ease of use of AI tools show that teachers encounter certain challenges. Although there is a slight trend towards ease of use, the need for training is evident. Naidu,

2023. Also underline the importance of teacher training in the effective use of educational technologies. Lack of training may limit teachers' ability to integrate these tools effectively, which could restrict the potential benefits of chatbots.

This study has certain limitations, such as the sample size and the focus on a specific geographic region. These factors may limit the generalizability of the results. In addition, most participants already had some level of exposure to AI, which could influence their positive perceptions. Future research could expand the sample and explore the perceptions of teachers without prior experience in AI, as well as investigate the effectiveness of specific training programs in different educational contexts.

CONCLUSIONS

The development of information technology and AI places university teachers in a position of constant learning. Although ICTs are advances that positively contribute to education and language learning, in general, they require information search, translation and human-technology interaction.

It is concluded that the set of articles that served as a study for this research refer to the need to incorporate AI to teach English and in the educational field. In the line of limitations, it is necessary to note the need for solid research related to this topic. The impact of AI, which increases over the years, justifies the demand for scientific and educational research to obtain benefits in the teaching-learning of English or a second language and to reduce the counterproductive or collateral effects of these.

Constant exposure to the language through interactive narratives has made it easier for students to follow stories and instructions in English. This, combined with an increase in oral production, suggests that students not only understand English better, but are also more comfortable using it in communicative contexts. The playful and technological component of the project has been instrumental in keeping students' motivation high. The use of tools such as Dungeon Alchemist, Foundry Virtual Tabletop, ChatGPT and Dall-e has captured students' interest, making the learning experience more immersive and relevant to them. This additional motivation has not only improved academic performance, but has also promoted a positive attitude towards learning English.

It is also important to point out the limitations of the study, such as the restriction of the sample to students from a specific faculty, which limits the generalization of the results to other contexts or groups of students. In addition, the study did not allow the evaluation of other AI tools that could have had a complementary impact on English language learning. Therefore, future research could explore the effectiveness of different AI technologies, comparing their impact in different educational contexts and on students with different ability levels. It would also be relevant to investigate how to adapt tools such as ChatGPT for students with specific educational needs, including those with disabilities or particular difficulties in language learning. Finally, longitudinal studies would be beneficial to evaluate the long-term impact of these tools on students' linguistic progress. In conclusion, other AI tools have great potential to enrich English language learning in educational contexts, but their implementation must be carefully adapted to students' needs and complemented with appropriate teacher training, thus ensuring their maximum effectiveness.

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Conflicto de intereses

Los autores declaran no tener ningún conflicto de intereses.

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Ramos Idrovo Silvia Licett, Nancy de las Mercedes Barreno Silva, Leonardo Mauricio Martínez Paredes y Erich Gonzalo Guamán Condoy: Proceso de revisión de literatura y redacción del artículo.