



Artificial Intelligence In Language Teaching And Learning

Karina Fernanda Sotomayor Cantos¹

ksotomayor@uteq.edu.ec

<https://orcid.org/0000-0002-6134-1875>

Universidad Técnica Estatal de Quevedo

Rosa Cecibel Varas Giler

rvaras@uteq.edu.ec

<https://orcid.org/0000-0002-2117-4128>

Universidad Técnica Estatal de Quevedo

Israel Eduardo Castro Magayanes

icastrom@uteq.edu.ec

<https://orcid.org/0000-0003-1385-9175>

Universidad Técnica Estatal de Quevedo

ABSTRACT

Due to its capacity to simulate human intelligence processes that are managed by machines, particularly computer systems, artificial intelligence (AI) seems to have numerous applications nowadays. From this perspective, this article presents a literature review of the applications of AI in the teaching and learning of languages. A search of articles was carried out in the Google Scholar database. The method used to review the articles selected is the qualitative research method, specifically content analysis. The study's conclusions show, due to its many advantages, AI is essential in language teaching and learning, being a meaningful tool for both teachers and students.

Keywords: *artificial intelligence; EFL classrooms; english; language; tools.*

¹ Autor principal.

Correspondencia: ksotomayor@uteq.edu.ec

Inteligencia Artificial en la Enseñanza y el Aprendizaje de Idiomas

RESUMEN

Debido a su capacidad para simular procesos de inteligencia humana que son manejados por máquinas, particularmente sistemas informáticos, la inteligencia artificial (IA) parece tener numerosas aplicaciones en la actualidad. Desde esta perspectiva, este artículo presenta una revisión bibliográfica de las aplicaciones de la IA en la enseñanza y aprendizaje de idiomas. Se realizó una búsqueda de artículos en la base de datos Google Académico. El método utilizado para la revisión de los artículos seleccionados es el método de investigación cualitativa, específicamente el análisis de contenido. Las conclusiones del estudio muestran que, debido a sus múltiples ventajas, la IA es esencial en la enseñanza y el aprendizaje de idiomas, siendo una herramienta significativa tanto para profesores como para estudiantes.

Palabras claves: *inteligencia artificial; aulas de inglés como lengua extranjera; Inglés; idioma; herramientas*

Artículo recibido 20 julio 2023

Aceptado para publicación: 20 agosto 2023

INTRODUCTION

The ability of a machine to imitate intelligent human behavior is known as artificial intelligence (AI), which is also known as the science and engineering of creating intelligent machines, particularly intelligent computer programs (McCarthy, 2007). AI is becoming a crucial component of contemporary educational systems since it has the potential to improve teaching approaches, personalize learning experiences, and accelerate administrative processes.

In actuality, artificial intelligence (AI) handles some of the most pressing issues like transforming methods of instruction and promoting the achievement of SDG 4. However, the quick advancement of technology always comes with hazards and difficulties. The Education 2030 Agenda can be achieved with the help of AI technologies, and UNESCO is committed to assisting Member States in doing so while ensuring that its use in educational contexts is governed by the fundamental values of equity and inclusion (UNESCO, 2019).

Teaching English as a second language (ELT) is one of many fields in education where artificial intelligence (AI) is having a significant impact. AI-powered tools and technologies are being used to provide more immersive and engaging learning experiences for students of all grade levels, personalize learning, and offer quick feedback. It is thought that AI has the power to improve education for every student by making it more equal, efficient, and enjoyable.

Despite the widespread acceptance of using educational technologies in English language teaching (ELT), it is our duty as language teachers to understand the advantages and difficulties of AI now to better prepare for the future (Hockly, 2023).

According to several studies, artificial intelligence (AI) has the power to completely change how English is taught and learned. Students can learn languages more effectively with the aid of AI. Although the research on AI's usefulness in education is still in its early stages, the preliminary findings are encouraging.

This article examines how AI could transform education as well as the various ways it is currently used to teach English, emphasizing some of the exciting research being done in this field.

METHODOLOGY

The approaches used in the current article review are described in this section. It talks about the research design in terms of selecting research papers for sampling, gathering data, and the analysis to summarize a review of publications.

The present study is a theoretical review that employs a qualitative approach that allows knowing the use of AI in English teaching and learning. To collect the articles that were part of the literary review, a search was made in the Google Scholar database.; with a temporal delimitation of the last 3 years (2020-2023); citable documents, and type of literature (articles). The search was carried out in the month of August 2023.

Once the search was carried out with the aforementioned criteria, special emphasis was placed on titles referring to Artificial Intelligence in teaching-learning English. Each article's summary (abstract), results, and conclusion were read to select those that met the investigation's criteria. Articles published before 2020 and those whose methodology was applied to Artificial intelligence in a different field, were specifically excluded.

RESULTS AND DISCUSSION

In this literature review, 5 articles were included that referred to the aforementioned criteria. This sample is presented in Table 1.

Table 1 *Analyzed simple*

Database	Year of publication	Authors	Title
Scholar Google	2020	Junaidi, Kenny, Fathu &Tatum	Artificial Intelligence in EFL Context: Rising Students' Speaking Performance with Lyra Virtual Assistance
Scholar Google	2021	Li Ma	An Immersive Context Teaching Method for College English Based on Artificial Intelligence and Machine Learning in Virtual Reality Technology
Scholar Google	2021	Vo & Nguyen	Applying Grammarly as an Online Grammar Checker Tool to Enhance Writing Skills for English-Major Students
Scholar Google	2020	Suryana, Asrianto & Murwantono	Artificial intelligence to master english listening skills for non-english major students.
Scholar Google	2022	Arini, Hidayat, Winarti & Rosalina	Artificial intelligence (AI)-based mobile learning in ELT for EFL learners: The implementation and learners' attitudes

The results of the literary review are described below:

New demands and challenges have been brought about by technological advancements for both teachers and students. We need to be prepared to advance with AI even if we haven't even finished talking about how Internet and communication technology (ICT) is affecting our classrooms. (Sumakul et al, 2022). In general, AI is intended to execute and facilitate human tasks virtually. This concept can benefit both teachers and students in the teaching and learning process when it is used in a learning environment. (Russell et al., 2004)

That's the reason why Junaidi et al. (2020), conducted a quasi-experimental study to evaluate the efficacy of AI applications in EFL classrooms. In this research, the Lyra Virtual Assistant (LVA) was used. This program is an intelligent personal assistant that responds to queries from users on a variety of subjects, offers suggestions, and manages the user's device using natural language. (Budzinski et al., 2019).

The goal was to enhance the speaking abilities of seventh graders, whose English proficiency was considered weak. This grade has a rule allowing students to bring cell phones into the classrooms. A sample of 33 and 32 students, respectively, from the experimental and control groups, participated in the study. Each group has equal English-speaking skills. Both the pre-test and the post-test utilized an oral test. The content from the syllabus used for the pre-test involved students speaking with inappropriate tone and pronunciation.

After that, researchers started imparting knowledge to the experimental and control groups. Researchers used chosen lesson materials and vocabulary pronunciation in the control group. The same content was taught to the experimental group, but the students used the Lyra Virtual Assistant app to practice their pronunciation. Two sessions of forty minutes were held over four weeks. Then they conducted a post-test.

The results demonstrated that speaking teaching using Lyra Virtual Assistant produced better results for the experimental group than for the control group. Therefore, Lyra helps students perform better when speaking English.

Ma (2021) carried out experimental research to examine a college English immersive context teaching approach based on virtual reality (VR) technology and machine learning. Because VR technology places

a high value on students' practical skills (Shelly et al., 2020). The sample for this research was freshmen from economics in a university, 34 students in class 1 and 33 students in class 2. Average English score differences were minimal.

Class 1 was an experimental class that used constructivism and VR technology in conjunction with English immersion education for one semester. Class 2 worked as a control group, employing traditional teaching strategies and educating like PPT presentations, a whiteboard, and videos. The same teacher taught both courses, and the teaching methodology was consistent with the lesson material. Every class met three times per week. The two classes took the identical English test that included listening, speaking, grammar, reading, comprehension, and writing at the end of a semester.

The results demonstrated that the experimental class's speaking and listening scores were significantly higher than those of the control group. Additionally, the experimental class's writing score is somewhat higher than the control class's. This indicates that virtual reality immersion may enhance general performance.

Talking about another important English skill, like writing, it can mention that there are many AI tools that play an essential role in English language teaching and learning, such as Grammarly. It is an award-winning online grammar-checking tool available for free and the most widely used in the world. In this sense, Vo et al., (2023) researched the use of Grammarly as a proofreader and the improvement in students' writing skills.

The Grammarly tool was used by the researchers in this experimental investigation in English writing classes at a college of economic and social relations. Two writing classes served as the sample for this study. 17 students were in the experimental group and 20 were in the control group. Both classes covered the same subject, including cause and effect essays as well as narrative, comparison and contrast, and descriptive essays. After three months, students in both classes were required to submit a brief essay on the assigned topic in 45 minutes. Students in the experimental group were encouraged to use Grammarly's free version to double-check their manuscripts before submission, while the control group's submissions were not checked by any tools.

According to the findings, students who applied Grammarly in class tended to perform better than those who did not. This improvement can be attributed to Grammarly's technique of self-correction.

Grammarly's feedback, which shows right away after students complete their work, is more comprehensive for students when they are still aware of their goals and ideas than the teachers' corrective input, which was received a week after submission. Students may immediately identify the errors they regularly committed thanks to Grammarly's awareness and replacement alternatives, and they will be careful to avoid making the same errors in their future work.

However, in terms of assessing content and organization of the writing, the presence of teachers is highly required.

AI was used by Suryana et al., (2020) to improve yet a further essential skill. Their study looked into how students felt about using mobile AI applications to enhance their listening comprehension of English. It was qualitative research conducted via a WhatsApp online interview. Five students made up the sample, including two male and three female psychology majors. They looked at how participants felt about various artificial intelligence mobile applications, including TuneIn-NFL Radio, Free Music, Sports & Podcasts, Netflix, Joox Music, and VOA Learning English Listening every day, that can be used to develop listening abilities.

The study's findings revealed that many students believed Netflix to be the most useful and effective artificial intelligence mobile application for enhancing their English listening abilities.

Arini et al., (2022) worked on the same line two years later with a mobile learning application that is being developed to ensure that all learners have the opportunity to be autonomous and to advance collaborative learning. It was a quasi-experimental study examining whether the use of artificial intelligence based in the form of NovoLearning can elevate EFL students' competence. NovoLearning is an artificial intelligence-based mobile application available in the Play Store and App Store which assists the English as a Foreign Language teaching and learning process. The sample was 200 tertiary students in the first semester. 100 students were chosen as a control group and 100 students were selected as the experimental group. Both of the groups are not significantly different in English competence.

All of the participants were given a pretest. Then, after the groups have divided into control and experimental randomly, all the learning material and assignments were prepared, which is similar to both groups. The control group was given a Blended English course that consists of face-to-face interaction and using E-learning during the teaching and learning process. Meanwhile, the experimental

group was given NovoLearning as their learning tool in English courses. Before conducting the research, the experimental group was given training on using and operating AI-based mobile learning. NovoLearning consists of three different levels in general English; levels 1 to 3. All the students in the experimental group are required to finish all the levels to complete the program. The materials in the English course and NovoLearning are similar. The research was conducted in one semester. The post-test was administered to both control and experimental groups at the end of the semester.

The data analysis findings showed that the control and experimental groups both have significantly different results on the learners' English competence. The difference in the students' competence in this study can be attributed to two factors of learning to use artificial intelligence-based mobile learning: supporting the learning environment and reducing anxiety. In addition, it is also feasible to conduct autonomous learning.

CONCLUSION

The present reviews aim to identify AI's applications in language learning and teaching. The finding supports the notion that, due to its many advantages, AI is essential in language teaching and learning. Since AI is a continuously developing science, it is always producing new tools for teaching and learning languages. Future language learning is anticipated to be significantly influenced by AI as it develops. It's imperative to emphasize that AI is a potent tool that may be employed to enhance language acquisition for students of all ages and proficiency levels. Artificial intelligence (AI) can assist students in learning a new language more quickly and successfully by offering individualized learning, real-time feedback, adaptability, access to resources, and cost-effectiveness.

It is unlikely that technology will ever fully replace instructors, though. Teachers have a special combination of abilities and traits that AI cannot duplicate in the classroom, including emotional intelligence, the capacity to adapt to different requirements, creativity, relationship-building, and judgment.

REFERENCES

- Arini, D. N., Hidayat, F., Winarti, A., & Rosalina, E. (2022). *Artificial intelligence (AI)-based mobile learning in ELT for EFL learners: The implementation and learners' attitudes*.
- Budzinski, Oliver & Noskova, Victoria & Zhang, Xijie, 2018. "The brave new world of digital personal assistants: Benefits and challenges from an economic perspective," Ilmenau Economics Discussion Papers 118, Ilmenau University of Technology, Institute of Economics.
- Hockly, N. (2023). *Artificial Intelligence in English Language Teaching: The Good, the Bad and the Ugly*. RELC Journal, 0(0). <https://doi.org/10.1177/00336882231168504>.
- Junaidi, Budianto Hamuddin, Kenny Julita, Fathu Rahman, Tatum Derin. (2020). *Artificial Intelligence in EFL Context: Rising Students' Speaking Performance with Lyra Virtual Assistance*. International Journal of Advanced Science and Technology, 29(05), 6735 - 6741. Retrieved from <http://serisc.org/journals/index.php/IJAST/article/view/17726>.
- Ma, L. (2021). *An Immersive Context Teaching Method for College English Based on Artificial Intelligence and Machine Learning in Virtual Reality Technology*. Mob. Inf. Syst., 2021, 2637439:1-2637439:7.
- McCarthy, J. 1997. *What is Artificial Intelligence?* Available electronically at [http:// www-formal.stanford.edu/jmc/whatisai/whatisai.html](http://www-formal.stanford.edu/jmc/whatisai/whatisai.html)
- Russell, s. J.; norvig, p. (2004). *Inteligencia artificial. Un enfoque moderno*. Pearson educación, s.a. <https://luismejias21.files.wordpress.com/2017/09/inteligencia-artificial-un-enfoque-moderno-stuart-j-russell.pdf>
- Shelly, C. S., Nuraida, I., & Oktaviana, F. (2020). *An analysis of teacher pedagogical competence in teaching English at SMK PGRI 3 Kota Serang*. Journal of English Language Teaching and Literature (JELTL), 3(1), 54-65
- Sumakul, D. T. Y. G. ., Hamied, F. A. ., & Sukyadi, D. (2022). *Artificial Intelligence in EFL Classrooms: Friend or Foe?*. LEARN Journal: Language Education and Acquisition Research Network, 15(1), 232–256. Retrieved from <https://so04.tci-thaijo.org/index.php/LEARN/article/view/256723>

- Suryana, I., Asrianto, A., & Murwantono, D. (2020). *Artificial Intelligence to Master English Listening Skills for Non-English Major Students*. *Journal of Languages and Language Teaching*, 8(1), 48-59. doi:<https://doi.org/10.33394/jollt.v8i1.2221>
- UNESCO. (2019). *Artificial intelligence in education: challenges and opportunities for sustainable development*. Working Papers on Education Policy, 7, 46.
- Vo, H. K. N., & Nguyen, Q. T. (2021). *Applying Grammarly as an online grammar checker tool to enhance writing skills for English-Major students*. *A Survey on Teachers' Perceptions of Their Emergency Remote English Teaching*, 454.