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The use of artificial intelligence to develop reading comprehension in English

El uso de la inteligencia artificial para desarrollar la comprensión lectora en Inglés

O uso da inteligência artificial para desenvolver a compreensão da leitura em inglês

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ABSTRACT

Introduction: This research focused on the use of Artificial Intelligence to develop reading comprehension in English language students in the National and Foreign Language Teaching program at the Eloy Alfaro University of Manabí, Chone Extension. The main objective was to design a strategy using artificial intelligence to enhance reading comprehension in English in order to improve academic performance and the educational experience. The strategy was subsequently disseminated. Materials and methods: A dual methodological design combined quantitative and qualitative techniques according to the research objectives. Interviews were conducted with teachers to systematically and in-depth investigate the perceptions, experiences, and preparation levels of English language teachers regarding the incorporation of Artificial Intelligence (AI) in education, particularly in English language teaching. Results: Likewise, the tools used, perceived advantages, challenges faced, impact on student learning, and training or institutional needs for the effective implementation of this technology in university contexts were identified. Discussion: The strategy's dissemination emphasized the importance of ongoing professional development. Teachers recognized that meaningfully integrating AI requires not only knowledge of digital tools but also pedagogical training that links them to learning outcomes. Therefore, workshops, collaborative planning meetings, and peer mentoring were proposed as essential components to support teachers in implementing AI-ERC with confidence and effectiveness. Conclusions: In conclusion, the AI-ERC strategy is more than a technological proposal; it is a pedagogically grounded approach that strengthens teachers' roles and enhances the learning experience through AI. The dissemination process with teachers confirmed that, with appropriate training, careful planning, and ongoing support, AI-ERC can become a sustainable and impactful method for improving English reading comprehension.

Keywords: Artificial intelligence (AI), reading comprehension, English language.

RESUMEN

Introducción: La investigación se centró en el uso de la Inteligencia Artificial para Desarrollar la Comprensión Lectora en Estudiantes de Inglés de la Carrera de Pedagogía en Lenguas Nacionales y Extranjeras de la Universidad Eloy Alfaro de Manabí, Extensión Chone. El objetivo principal fue diseñar una estrategia con el uso de la inteligencia artificial para potenciar la comprensión lectora en inglés con el fin de mejorar el rendimiento académico y la experiencia educativa, la estrategia fue posteriormente socializada. Materiales y métodos: Un diseño metodológico dual amalgamó técnicas cuantitativas y cualitativas de acuerdo a los objetivos de la investigación. Se realizaron entrevistas a docentes para indagar de manera sistemática y profunda sobre las percepciones, experiencias y niveles de preparación de los docentes del área de inglés acerca de la incorporación de la Inteligencia Artificial (IA) en el ámbito educativo, particularmente en la enseñanza del idioma inglés. Resultados: Asimismo, se identificaron herramientas utilizadas, ventajas percibidas, retos enfrentados, impacto en el aprendizaje de los estudiantes y necesidades formativas o institucionales para una efectiva implementación de esta tecnología en contextos universitarios. Discusión: La socialización de la estrategia enfatizó la importancia del desarrollo

profesional continuo. El profesorado reconoció que integrar la IA de forma significativa requiere no solo el conocimiento de las herramientas digitales, sino también una formación pedagógica que las vincule con los resultados de aprendizaje. Por ello, se propusieron talleres, reuniones de planificación colaborativa y mentoría entre pares como componentes esenciales para apoyar al profesorado en la aplicación de la IA-ERC con confianza y eficacia. Conclusiones: En conclusión, la estrategia IA-ERC es más que una propuesta tecnológica; es un enfoque con base pedagógica que refuerza el rol del profesorado y mejora la experiencia de aprendizaje a través de la IA. El proceso de socialización con el profesorado confirmó que, con una formación adecuada, una planificación minuciosa y un apoyo continuo, la IA-ERC puede convertirse en un método sostenible e impactante para mejorar la comprensión lectora en inglés.
Palabras clave: Inteligencia artificial (IA), comprensión lectora, lengua inglesa.

RESUMO

Introdução: Esta pesquisa se concentrou no uso de Inteligência Artificial para desenvolver a compreensão de leitura em estudantes de língua inglesa no programa de Ensino de Línguas Nacionais e Estrangeiras da Universidade Eloy Alfaro de Manabí, Extensão Chone. O objetivo principal foi elaborar uma estratégia usando inteligência artificial para aprimorar a compreensão de leitura em inglês, a fim de melhorar o desempenho acadêmico e a experiência educacional. A estratégia foi posteriormente disseminada. Materiais e métodos: Um delineamento metodológico duplo combinou técnicas quantitativas e qualitativas de acordo com os objetivos da pesquisa. Entrevistas foram conduzidas com professores para investigar de forma sistemática e aprofundada as percepções, experiências e níveis de preparação de professores de língua inglesa em relação à incorporação de Inteligência Artificial (IA) na educação, particularmente no ensino de língua inglesa. Resultados: Da mesma forma, foram identificadas as ferramentas utilizadas, as vantagens percebidas, os desafios enfrentados, o impacto na aprendizagem dos alunos e as necessidades de treinamento ou institucionais para a implementação efetiva dessa tecnologia em contextos universitários. Discussão: A disseminação da estratégia enfatizou a importância do desenvolvimento profissional contínuo. Os professores reconheceram que a integração significativa da IA requer não apenas o conhecimento de ferramentas digitais, mas também uma formação pedagógica que as vincule aos resultados de aprendizagem. Portanto, workshops, reuniões de planejamento colaborativo e mentoria entre pares foram propostos como componentes essenciais para apoiar os professores na implementação da AI-ERC com confiança e eficácia. Conclusões: Em suma, a estratégia AI-ERC é mais do que uma proposta tecnológica; é uma abordagem pedagogicamente fundamentada que fortalece o papel dos professores e aprimora a experiência de aprendizagem por meio da IA. O processo de disseminação com os professores confirmou que, com treinamento adequado, planejamento cuidadoso e suporte contínuo, a AI-ERC pode se tornar um método sustentável e impactante para aprimorar a compreensão da leitura em inglês.
Palavras-chave: Inteligência artificial (IA), compreensão da leitura, língua inglesa.

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Introduction

Learning English is crucial in today's world due to its role as a global language of communication, in the professional and academic fields, and its contribution to culture and entertainment. The teaching-learning process of English as a foreign language has been permeated from the beginning by the influence of different methodological approaches and currents; in this way, traditional, structural and communicative methods have been used by teachers to develop skills in the acquisition of English.

On the other hand, reading comprehension as a skill plays a fundamental role in the comprehension of texts, documents, science, technology and business. Mastering reading comprehension in English allows learners to access a vast array of academic, professional, and cultural resources, expanding their educational and employment opportunities. Currently, several authors have addressed reading comprehension in English by offering strategies and tools for its development based on the use of technological tools such as: Para (Echeverría & Molina, 2022, as cited with Elmer, Eliseo, Briceño, Rodríguez, 2024) "The integration of digital tools in the classroom not only improves text comprehension, but also encourages the development of creative and critical skills in students"

Similarly, it states that Information and Communication Technologies (ICT) are considered ideal tools for teaching and learning in any area. From the use of interactive platforms, smartphones, apps to the most recent one that is artificial intelligence (AI). (Bufante, 2014) In this context, artificial intelligence (AI) has emerged as a powerful tool in the educational field, revolutionizing the way students interact during English language

learning. According to "Artificial Intelligence (AI) is the ability of machines, such as a computer or a robot, to perform tasks associated with human intelligence: calculate, memorize data, understand meanings, and even play chess." (Torralba, 2025). Artificial intelligence (AI) offers innovative solutions through personalized reading applications, immediate feedback, and adapting content to individual student needs.

In the educational context, digital technologies such as Natural Language Processing (NLP), educational chatbots, and text recommendation systems have emerged as effective tools for supporting reading comprehension. (Chen, Xie, & Hwang, 2020). These resources facilitate individualized learning by simulating natural language interaction, providing automatic guidance, and recommending materials aligned with learners' specific needs and difficulties. Recent studies have shown that the integration of such technologies can significantly enhance students' reading comprehension and engagement, particularly by allowing adaptive feedback and promoting self-paced learning. (Zhang, Wang, & Li, 2022)

"Artificial Intelligence (AI) can potentially enhance language learning outcomes by offering personalized learning experiences, improving speaking and listening skills, and increasing student engagement. However, "integrating Artificial Intelligence (AI) into language education in countries like Ecuador presents unique challenges, such as limited infrastructure, teacher training, and data privacy and security concerns." (Mario Fabricio Ayala Pazmiño, 2023). In Ecuador, many public schools, especially in rural and marginalized urban areas, face difficulties in accessing stable internet connections and sufficient technological equipment, which makes the implementation of AI-based tools difficult. Additionally, there is a significant gap in digital literacy among teachers, who often lack the training and ongoing professional development necessary to effectively use AI applications in the classroom. According to the Ministerio de Educación del Ecuador (2022), a large percentage of schools still operate without fully equipped computer labs or reliable access to digital platforms.

Furthermore, the absence of clear national policies and regulations regarding the ethical use of AI in education raises concerns about the protection of students' personal data and the potential misuse of sensitive information, making the integration of AI in the Ecuadorian educational system a complex and delicate process that requires comprehensive planning and investment. At Eloy Alfaro University of Manabí, it was observed that students carried out various activities to address reading comprehension in the subject of applied linguistics, and what motivated the learning of the search for information and the comprehension of academic texts related to the subject of Applied Linguistics in the 7th and 8th semesters. During the development of the activities, the authors considered that there were shortcomings in interweaving the use of artificial intelligence (AI) for the learning of reading comprehension related to the specific use of the platform and activities.

Therefore, it was decided to deepen the use of artificial intelligence (AI) to develop reading comprehension and the following was declared as a research problem: Insufficient pedagogical strategies to integrate artificial intelligence (AI) in the development of reading comprehension in English, which limits its use, academic performance and the educational experience of students. So, the objective considered: to design a didactic strategy for the use of artificial intelligence in the development of reading comprehension in English, aimed at improving academic performance and the educational experience.

For this research, a population of 400 students of the Pedagogy of National and Foreign Languages career and a selected sample of 40 corresponding to the 7th and 8th semesters of the Pedagogy of National and Foreign Languages major were used. This work allowed the authors to make more optimal use of artificial intelligence (AI) for the development of reading comprehension in English for students in the 7th and 8th semesters.

In recent decades, the role of technology in educational environments has acquired unprecedented relevance. Far from being a complementary resource, technological tools have established themselves as essential components to facilitate more dynamic, inclusive teaching-learning processes adapted to the needs of the 21st century. This transformation has not only impacted pedagogical methods but also how students access knowledge, interact with content, and develop key competencies for a digitized world.

In this context of constant technological evolution, artificial intelligence (AI) emerges as one of the most influential and promising innovations. Its incorporation into the educational field has opened up new possibilities to personalize learning, automate administrative tasks and offer immediate feedback, all aimed at improving academic performance and the training experience. Understanding the scope of AI in education requires a critical review of its foundations, current applications, and ethical challenges.

From a general perspective, artificial intelligence can be defined as the field of study that focuses on the development of systems capable of performing tasks that, if carried out by human beings, would require

intelligence. According to Artificial Intelligence, it refers to the design of rational agents that perceive their environment and act to maximize their chances of success in a specific objective. This definition emphasizes both processing capacity and decision-making, elements that are essential when considering its application in educational contexts. (Russell & Norvig, 2021)

During the 1980s and early 1990s, expert systems began to be used for diagnostic and evaluative purposes in education, and the incorporation of artificial intelligence (AI)-based tools and methodologies into university curricula was promoted. (Boden, 1984) (Jones, 1985, as cited in Revista de Investigación Apuntes Universitarios, 2022) andThis period also evidenced important advances such as the design of interactive learning environments, as well as the application of genetic algorithms and fuzzy logic in research related to education, science and technology, all of which are considered techniques of AI. (Sánchez, 1997)

During the 1990s, AI studies expanded into more complex contexts, such as the analysis of programming languages, medical and exact sciences, electronics, and industrial problem-solving (Norvig, 1992). At the same time, debates arose within medical schools about the potential of AI to optimize both the diagnosis and treatment of diseases, and it was argued that these technologies could significantly improve the learning of medical students (Lillehaug, 1998). From the year 2000 onwards, the presence of AI in education has gained greater relevance, being observed in the development of intelligent tutoring systems. At the same time, universities have intensified research aimed at continuing teacher training with the support of AI tools. Researchers such as emphasize the need for future teachers to master these tools. (Amershi, y otros, 2005) (Matas-Terrón, García, & Pérez, 2020).

"AI has a strong potential to accelerate the process of realizing and developing global goals around education by reducing difficulties in accessing learning, automating management processes and optimizing methods that improve learning outcomes, however, the integration of AI into educational environments in certain environments may take time due to the policies and administrative processes of each nation, however, in the current global context of the technological revolution there are human qualities that cannot yet be reproduced by artificial intelligence such as creativity, the ability to reproduce new ideas or the ability to improvise and constantly evolve these limitations that little by little they are being surpassed to achieve a more optimal development that allows us to go beyond the 4.0 revolution. Many people ask: what can Artificial Intelligence do in and for education? the answers are plentiful, among the numerous applications of AI in education, three approaches can be highlighted that are beginning to have an impact on training: intelligent conversational software agents (chatbot), the creation of online platforms for self-learning, educational robotics." (Tourón, 2021)

According to (Golan et al., 2018; Johsson-Glenberg, 2007; Kuhn et al., 2022, cited by Rad, 2025), in recent years, scholars have increasingly argued that technology-enhanced learning provides a more engaging and effective approach to reading instruction compared to traditional methods. This is due to the personalized, interactive experiences technology can offer, which promote deeper comprehension and motivation.

This perspective maintains that technological tools not only enrich the content but also adapt textual challenges to the individual needs of the reader, which is essential for achieving deep and sustained comprehension. So, Artificial intelligence has increasingly been implemented in reading instruction for learners of English as a foreign language, offering support that goes beyond traditional methods. (Hamideh Rad, Reinforcing L2 reading comprehension through artificial intelligence intervention: Refining engagement to foster self-regulated learning, 2025) emphasize that intelligent systems provide adaptive feedback and personalized support that respond to each learner's performance. These tools can modify text difficulty, encourage active participation, and foster self-directed learning. As a result, AI-enhanced environments appear to create more meaningful and individualized reading experiences, which are essential for long-term comprehension development.

Reading comprehension in English as a foreign language constitutes a complex cognitive process involving dynamic interaction between the reader, the text, and the sociocultural context. This skill requires mastery of vocabulary and grammar and the development of metacognitive strategies that enable learners to infer, synthesize, and interpret implicit meanings. Various studies have shown that reading comprehension is a fundamental component of academic success, as it facilitates access to knowledge across different disciplines. Therefore, strengthening this skill is a priority in English language teaching programs, especially in contexts where English is not the native language.

The purpose of reading and the balance between skills and language affect the teaching of reading in English. Two contributions to the approach to reading in English. One is the shift from text as a linguistic object to text

as a vehicle of information. The key principles for learners are that extracting information accurately and quickly is more significant than language details; understanding the macrostructure comes before language study; and applying the information in the text is extremely important. The reader first processes the language and then links the ideas to prior knowledge. The second significant contribution to teaching reading in courses is recognizing that good reading requires language and skills. According to (Hosenfeld 1977, cited by Bojovic, 2010), less successful foreign language learners had a fragmented approach to text, while successful learners went for overall meaning, guessing or skipping language and information.

As referred in (Alderson 1984, cited by Bojovic 2010), several hypotheses were tested about the role of language and skills, showing that poor reading in a foreign language is due in part to poor reading in L1, together with an inadequate knowledge of the foreign language. The learners need to reach a threshold level of L2 before they can transfer any L1 skills to their L2 reading tasks. (Bojovic, 2010)

Reading comprehension in English is not just about interpreting linguistic signs from a text; it goes beyond that. This is a skill, an ability that human beings must engage in throughout their lives through reading, writing, listening, and speaking. It goes beyond just reading letters; it is about analyzing the text holistically, recognizing implicit ideas, and being able to reflect on and explain what is read. It is essential to know the importance of reading comprehension in English since it encompasses methods, techniques, elements, development, skills, etc. This is why several authors have addressed different points of view.

"One of the main premises of reading comprehension is the need to encourage the university student community to engage in reading, as it provides the tools necessary for the individual's intellectual development. The information that professors transmit to students serves merely as an introduction, enabling them to explore the sources that have been referenced. A common point emphasized by all professors is that reading supports both learning and teaching across all areas of knowledge. In this regard, students must take responsibility and actively cooperate by increasing the number of words they read daily, engaging with the academic output of their discipline." (Gómez, Reading comprehension of English like foreign language, 2015)

"The most touching aspect of reading comprehension development is that, whether in the native or foreign language, the final results do not differ. Both learning processes are characterized by flexibility, clearly moving away from rigidity." (Gómez, Reading comprehension of English like a foreign language, 2015) Human beings are capable of developing reading comprehension skills through various learning paths. Ultimately, with sustained and adequate practice, individuals can reach a proficient level of understanding, regardless of the language or method chosen.

In this sense, reading comprehension can be analyzed through different dimensions, among which are: According to (Alliende and Condemarín 1986 cited by Luis Herrera, 2015) the different successions of comprehension that participate in reading are classified into the following levels: literal comprehension, in which the reader asserts his or her abilities, which are to recognize and remember, since the reader understands what the text says explicitly. Reorganization of information consists of reordering ideas through classification and synthesis.

It requires the reader to know: Classify elements (people, objects, places), Outline the content, Summarize the essentials, and Integrate ideas into a synthesis. Inferential comprehension, in which the reader has to join their personal experience to the text and make conjectures. Critical reading or evaluative judgment entails a judgment about reality or fantasy, a value judgment. Reader appreciation is a psychological and aesthetic impact of the text on the reader. However, the different dimensions of reading comprehension allow the learner to mature intellectually and thus be able to make value judgments, facilitating the exposition of their own critical, reflective, and evaluative thinking.

On the other hand, it is feasible to consider reading comprehension taking into account the different skills in which it is shown. The website, specifically the blog of E-books Patagonia, a company dedicated to digital solutions for the publishing industry, establishes that when it comes to developing reading comprehension, there are key points to create, develop, and enhance in learning plans, which will be named below:

- Decoding: This is the basis of the other skills. Students pronounce words that they have heard before, but have not seen written.
- Vocabulary: Understanding most of the words that the learner reads is essential for them to understand the text.
- Fluency: Recognizing words is the first step for the student to read faster and make fewer mistakes.

- Sentence construction and cohesion of ideas: Having knowledge of how one concept relates to another is the core to understanding the meaning of each paragraph on its own and within the group of paragraphs that connect an entire text.
- Previous knowledge and reasoning of the student: The reader tends to relate what he reads to what he knows or to the closest thing he has experienced.

Two exercises strengthen all these skills: reading aloud and interacting with learners in conversations that enrich their vocabulary, phonetic recognition, and the way they construct the messages they wish to express. (ebookspatagonia, 2024).

The development of reading comprehension in academic contexts requires the implementation of pedagogical strategies that are not only effective but also safe from the emotional and cognitive point of view of the student. Various studies have shown that practices focused on teacher accompaniment, text structuring, and active reader participation are essential to improve levels of comprehension.

Recent developments in educational technology have introduced various platforms designed to enhance reading comprehension among language learners. Traditional digital platforms such as Raz-Kids, Epic! Reading A-Z and Newsela have provided learners with interactive texts, comprehension quizzes, and progress tracking features, helping students build vocabulary and reading strategies in English as a foreign language (EFL) context. More recently, the integration of artificial intelligence into reading platforms has further transformed instructional approaches. AI-powered systems now offer personalized feedback, adaptive difficulty levels, and intelligent tutoring functions that adjust to individual learner profiles, thereby fostering deeper cognitive engagement and supporting self-regulated learning. (Rad, Huang, & Hwang, 2025) These tools not only facilitate independent learning but also promote sustained motivation by simulating responsive and interactive learning environments.

One of the most consolidated strategies is the Guided Reading, which allows the teacher to form small groups to accompany students in reading texts appropriate to their level, promoting inferences, questions and connections with previous knowledge This strategy maximizes critical thinking and provides a safe environment for the development of reading skills, by reducing individual pressure and encouraging personalized feedback. (All, Literacy for, s.f.)

In a complementary way, the Activation of prior knowledge before reading has proven to be a highly effective technique, as it allows the student to make meaningful relationships between what they already know and the new content. This connection improves overall comprehension of the text and promotes a positive attitude towards reading. (Ruiz-Martín, 2023)

The Graphic organizers, such as concept maps and synoptic tables, facilitate the visual representation of the main and secondary ideas of a text. According to, its use contributes to the construction of mental schemes, favors the synthesis of information and strengthens the retention of the content read. In addition, these resources allow the teacher to monitor the level of comprehension without resorting to punitive strategies. (Valencia, 2022)

Another safe pedagogical strategy is explicit vocabulary teaching. (Rosas and Quiroz (2022) state that prior keyword selection and instruction help students approach the text with greater confidence and understanding, especially in contexts where there is a significant lexical gap.

Shared reading aloud, when done by the teacher, has a strong impact on the modeling of reading skills. He argues that this practice makes it possible to teach, implicitly, aspects such as intonation, fluency, and the interpretation of punctuation marks, while reducing the student's anxiety by not being forced to read aloud in front of their classmates. (Snow, 2002)

Likewise, the use of comprehension questions of different levels – literal, inferential, and critical – strengthens the reader's metacognitive skills. Duke and Pearson (2002) highlight that this technique stimulates higher-order thinking and encourages self-evaluation, skills necessary for a deep understanding of the text. Finally, the SQ3R (Survey, Question, Read, Recite, Review) technique, although traditional, is still in force in the educational field. According to Robinson, this structured technique allows students to develop reading autonomy by planning and checking their comprehension process (Robinson, 1970). Together, these strategies have not only demonstrated effectiveness in the development of reading comprehension but also represent safe pedagogical practices that respect the pace, level, and well-being of the student, contributing to an inclusive and meaningful learning environment.

Materials and Methods

The research topic was addressed using a mixed methodological design, which integrated the quantitative dimension oriented to the analysis of data obtained through diagnostic instruments and the qualitative dimension, focused on the compilation and review of relevant bibliographic sources at the university, which facilitated the development of a strategy for the use of artificial intelligence in the development of reading comprehension in English in the students of the 7th and 8th semesters of the Pedagogy of National and Foreign Languages Major in English at Eloy Alfaro University. On the other hand a correlational level of research was taken into account for this work.

Semi-structured interviews were carried out with English language instructors to gather the required data. At the same time, a structured questionnaire was administered to students enrolled in the 7th and 8th semesters of the Pedagogy of National and Foreign Languages program.

The study employed both inductive and deductive reasoning methods to delimit and generalize facts, phenomena, and processes related to the evaluation of students' oral English skills. This dual approach facilitated the precise specification of the theoretical foundations underpinning the proposed methodological strategy. The population and sample selected were made up of students and 3 teachers of the English Major.

Data collection was carried out with the use of semi-structured interviews with professors from the Eloy Alfaro Lay University of Manabí to know the use that teachers give to artificial intelligence (AI) in English classes of the pedagogy of national and foreign languages career, the survey of students to know their experiences and motivation on the use of artificial intelligence (AI) in English learning.

Therefore, a didactic strategy was designed based on the integration of artificial intelligence tools, particularly conversational AI and natural language processing platforms, to support English reading comprehension. This strategy incorporates stages of pre-reading, guided reading, and post-reading activities, allowing learners to receive real-time feedback, personalized vocabulary support, and adaptive comprehension questions. The AI platform is a virtual tutor that fosters autonomous and interactive learning experiences.

Results

By combining technology with thoughtful classroom support, the strategy proposed helps students become more confident and independent readers in English. To better understand the role and perception of Artificial Intelligence (AI) in developing English reading comprehension, two main data collection instruments were applied: a group interview with English teachers and a survey distributed to students. These tools were designed to gather both qualitative and quantitative information regarding participants' experiences, opinions, and level of familiarity with AI-based tools in language learning.

The group interview aimed to explore teachers' views, use, and perceived challenges of AI integration in English language teaching. Open-ended questions allowed participants to express their insights in depth, giving a clearer picture of their actual classroom practices and the potential they see in using AI to enhance learning. This approach helped identify not only the tools currently used but also the perceived advantages and barriers associated with their implementation.

On the other hand, the student survey focused on learners' awareness, experiences, and attitudes toward the use of AI in English learning. It also addressed their perceptions of teacher preparedness and institutional support. The survey provided valuable data on how students engage with digital tools, the benefits they notice, and the obstacles they face when trying to use AI resources for language learning.

Together, the results obtained from both instruments provide a comprehensive understanding of the current reality in the educational setting. The findings highlight similarities and differences between teachers' and students' perspectives and offer useful insights for improving the integration of AI in the English learning process. The analysis of the responses is presented below, organized by each question from the interview and survey.

Strategy to foster reading comprehension in English

In this research, a strategy was created to help solve a key issue: the lack of effective teaching methods for using Artificial Intelligence (AI) to support students' reading comprehension in English. The proposed approach is called AI-Enhanced Reading Comprehension (AI-ERC) and centers around the use of the IA AND READING

TOPICS. This strategy helps students quickly get the main idea of a text (and find specific information —two essential skills for understanding what they read.

AI-ERC combines three stages:

• Stage 1 AI Reading Tools: With the help of platforms like Rewordify, Quillionz, or ChatGPT, students can work with texts that are adjusted to their level. These tools offer explanations of difficult vocabulary, simplify complex sentences, and give instant feedback on tasks. This makes it easier for students to focus on finding the most important points in the text.

- Establish selection criteria for the tool (the most affordable, free of charge)
- Use of the tools (demonstrative activity on how to use the tool)
- Selection of topics to be worked on in the classroom

• Stage 2 Guided Reading Sessions: These are teacher-led sessions where students actively use AI tools while working on specific tasks. They practice skimming to find the main idea, scanning to locate key details, summarizing content, making predictions, and answering questions based on what they read. This hands-on use of AI makes reading more interactive and meaningful.

- Search for information on a chosen topic that matches students' interests and English level.
- Design questions and tasks for group and individual work.
- Create mind maps with AI to organize the compiled information.

• Stage 3 Control and Evaluation

- Select scientific articles related to the reading topic.
- Compare the information in the scientific articles with the data provided by the AI tools.
- Answer questions that address content covered by both the AI and the scientific articles.
- Discuss the advantages and disadvantages of using AI in the classroom.

At this stage, students compare the information obtained through AI (searches and answers to questions, vocabulary) with what is provided by the literature review and specialized online dictionaries, while the teacher monitors and evaluates the outcome.

Analysis of results and connection to the AI-ERC strategy

The data presented in Table 1 confirm that the three teachers share a favorable attitude toward Artificial Intelligence and recognize its benefits for English teaching. However, they also reveal variability in tool selection, technological confidence, and perception of obstacles. These differences justify the adoption of the AI-Enhanced Reading Comprehension (AI-ERC) strategy, designed to:

- Standardize criteria for tool selection (Stage 1), prioritizing accessible and free options such as Rewordify, Quillionz, or ChatGPT.
- Provide systematic pedagogical support through guided sessions (Stage 2), where teachers model and students practice skimming, scanning, summarizing, and creating concept maps using AI.
- Promote critical thinking by comparing AI-generated content with scientific articles (Stage 3) and discussing the advantages and limitations of AI use in the classroom.

Socialization

The strategy was shared with faculty members from the English Program, who expressed interest and considered it to be well-structured and suitable for implementation in other subjects. The instructors supported the use of Artificial Intelligence (AI) as a tool to enhance students' reading comprehension in English.

The socialization of AI-ERC with the teachers allowed the strategy to be adapted to their realities: continuous training workshops agreed upon for those who expressed the need for more preparation (67%), and institutional provision of devices and internet, identified as indispensable by 100% of participants, was emphasized. Thus, the findings from the diagnostic interview not only describe the current state but also provide the foundation for implementing AI-ERC as a coherent response to the needs detected in the classroom.

Results of the Group Interview with Teachers

The group interview with English language teachers offered valuable insight into their understanding, experiences, and perceptions of using Artificial Intelligence (AI) in language teaching. The participants' responses helped to better understand the current integration of AI in educational practice, as well as the advantages, limitations, and support required for its effective implementation.

In response to the first question, teachers described Artificial Intelligence as a powerful and helpful tool in the context of language teaching. One participant referred to AI as a “smart assistant” capable of understanding and generating language in ways that support both teachers and learners. Others mentioned that AI helps improve activities, save planning time, and generate new ideas. These views suggest that teachers see AI not as a replacement but as a valuable complement to their work, facilitating more efficient and creative teaching processes.

When asked about specific tools, the teachers listed several AI-powered applications, such When asked about specific tools, the teachers listed several AI-powered applications, such as ChatGPT, Duolingo, Gemini, Rosetta Stone, and ELSA Speak. These tools were recognized for their usefulness, especially in improving speaking skills and providing interactive feedback. Interestingly, one teacher mentioned not relying on a specific app but instead searching for free tools when needed. This reflects the flexibility in tool selection but also highlights a possible gap in consistent tool usage or institutional guidance.

Regarding actual use, all interviewees reported having used AI tools for teaching purposes. The most common ones included ChatGPT, Duolingo, Rosetta Stone, and ELSA Speak, primarily for helping students with listening, speaking, and writing skills. Their usage indicates that these tools are accessible and familiar to educators, contributing positively to language development tasks. However, some answers were brief or repetitive, which might suggest that although teachers are aware of these tools, they may not explore their full potential.

The teachers identified multiple advantages of using AI in English learning. These included personalized learning paths, immediate feedback, greater accessibility and flexibility, and the ability to engage students more effectively. Additional benefits mentioned were better time management and the generation of creative ideas for class planning. Such responses underline the role of AI in creating more dynamic and student-centered learning experiences.

However, when asked about challenges, responses were more varied. Some teachers acknowledged resistance to change or staying in their "comfort zone" as potential obstacles. Others noted student distractions as a possible downside of digital tool use. One participant claimed to have faced no difficulties at all. This variation in responses shows that the integration of AI in classrooms is still uneven and dependent on each teacher’s level of experience and adaptability.

In terms of skill development, all teachers agreed that AI can effectively support the improvement of specific English skills such as pronunciation, listening, and writing. They highlighted that these apps and platforms are particularly beneficial in helping students practice and reinforce these skills in interactive ways, beyond traditional methods. This reinforces the idea that AI can be a valuable ally in supporting language development outside the classroom.

When asked whether teachers are currently prepared to integrate AI into their lessons, the group revealed mixed opinions. Two participants believed that more training is necessary, particularly in managing new tools and applications. One participant, however, expressed confidence in their current level of preparation. These contrasting views suggest the need for targeted professional development to ensure that all teachers feel confident and capable when using AI in their teaching practice.

Finally, in terms of institutional support, teachers emphasized the importance of having adequate technological resources, such as laptops and reliable internet access. They also suggested the need for guides or toolkits to help teachers select and use appropriate AI tools with their students. This highlights a shared belief that, while AI has great potential, its effectiveness depends heavily on the availability of resources and structured guidance.

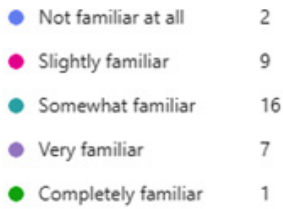
In this context, the AI-Enhanced Reading Comprehension (AI-ERC) strategy emerges as a structured and pedagogically grounded approach to integrating AI effectively into English language teaching. AI-ERC addresses many of the concerns raised by teachers by providing clear stages for implementation: first, selecting accessible AI reading tools adapted to students’ levels; second, guiding students through interactive reading sessions where they practice key skills such as skimming and scanning with AI support; and third, engaging students in critical analysis by comparing AI-generated content with authentic scientific articles. By combining technology with teacher-led activities and critical reflection, AI-ERC ensures that AI serves as a meaningful complement to teaching, empowering educators and learners alike while overcoming challenges related to training, resource availability, and tool selection.

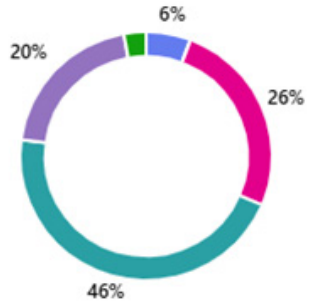
Table 1 Structured group interview conducted with five English teachers regarding the integration of Artificial Intelligence in language teaching.

Evaluated Aspect	Predominant Response	Teachers	%
1. General perception of AI	Positive view; described as an "intelligent assistant" that optimizes time and generates ideas	5	100%
2. Examples of tools mentioned	Mention specific applications (ChatGPT, Duolingo)	2	67%
	Prefer to search for free options based on needs	3	33%
3. Previous use of AI-based tools	Used Rosetta Stone, Duolingo, ChatGPT, or ELSA Speak for practice and support	5	100%
4. Perceived advantages	Personalization, immediate feedback, flexibility, and increased motivation	5	100%
5. Challenges or obstacles	Recognize resistance to change or technological distractions	5	67%
	Do not perceive significant obstacles	5	33%
6. Contribution to specific skills	Agree that AI mainly supports listening comprehension and other skills	5	100%
7. Teacher preparedness to integrate AI	Need more training for optimal use	5	67%
	Feel sufficiently prepared	5	33%
8. Necessary resources and infrastructure	Require teacher guidance, laptops, and a stable internet connection	5	100%

Results of the Group Survey with Students

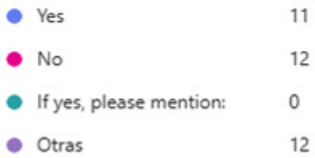
1. How familiar are you with the concept of Artificial Intelligence (AI) in the context of English language teaching?

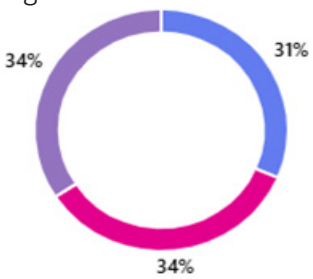




Most students have heard about artificial intelligence, but not all of them clearly understand how it is used specifically in English teaching or learning. Some have a general idea, while others still don't fully grasp the concept.

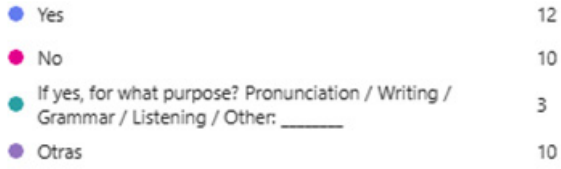
2. Do you know any AI tools that can be used for learning/teaching English?

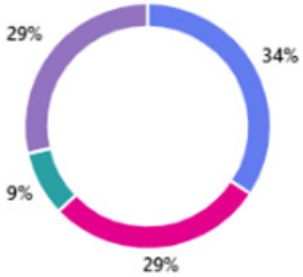




Some students mentioned tools like ChatGPT, Grammarly, or Duolingo, but others couldn't name any. This shows that there is still a lack of awareness about the AI tools available for English learning.

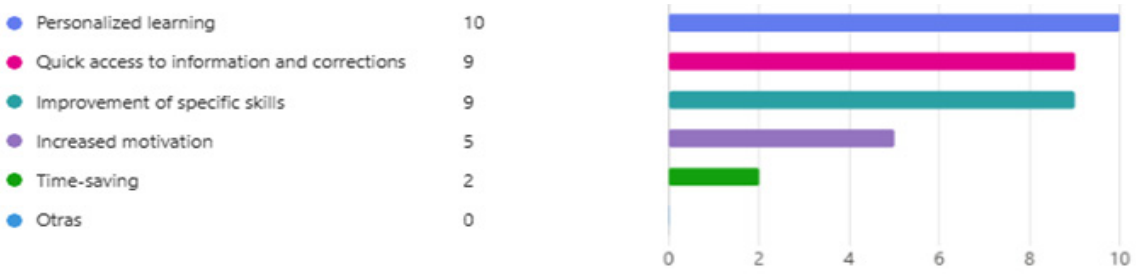
3. Have you used any AI-based tools to learn English?





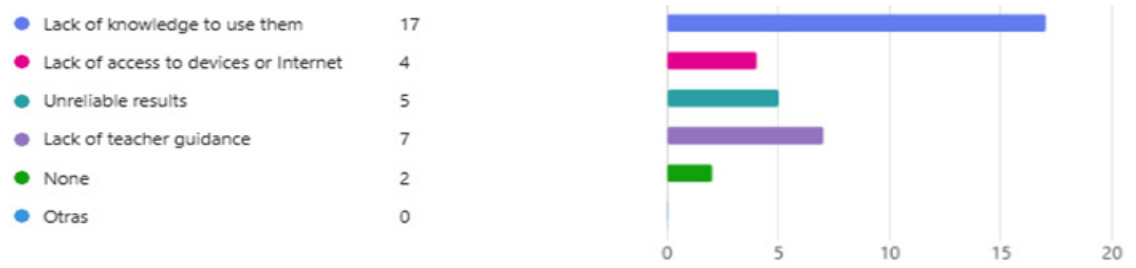
Several students have tried these tools, especially to improve writing or pronunciation. However, some have never used them, either because they don't know how or don't have access to them.

4. In your opinion, what are the main advantages of using AI in English learning?



The most common benefits mentioned were: practicing at any time, personalized learning, and faster progress. Many feel that AI helps them build confidence and practice more often.

5. What difficulties have you experienced or do you think you might experience when using AI tools?



Some students said they don't understand how to use these tools or that the platform's language is hard to follow. Others pointed out the lack of internet or proper devices as a barrier.

6. Do you think your teachers are prepared to integrate AI in the classroom?

Some students feel that teachers are not fully prepared yet, as they haven't been trained on how to use these tools or simply don't apply them in class.

7. Do you think AI can help you improve specific English skills?

Most students believe it can. They say AI can help with speaking, writing, grammar, and listening. This shows that they see AI as a practical aid for more complete learning.

8. What kind of institutional support do you think is necessary to better implement AI in English learning?

Discussion

The results obtained from interviews with five teachers and surveys administered to their students reveal a shared recognition of the potential that Artificial Intelligence (AI) holds for enhancing English language learning—particularly in reading comprehension. When examined through the lens of the AI-Enhanced Reading Comprehension (AI-ERC) strategy, the findings clarify which conditions already favour its implementation and which barriers must be addressed to make the strategy fully effective. (Sumakul, D. T., 2019).

One of the main insights from the teacher interviews is that the five educators view AI as a supportive, time-saving tool that can enrich lesson planning and foster more dynamic learning environments. They described AI as an "intelligent assistant" able to generate new ideas, adapt content, and provide immediate feedback—exactly the type of assistance envisioned for AI-ERC Stage 1 (AI-ready texts) and Stage 2 (guided practice with AI). Students echoed these positive perceptions, especially valuing the opportunity to practice English at any time, receive instant feedback, and follow personalized learning paths—benefits central to AI-ERC's focus on skimming and scanning scaffolds (Abrams, 2025).

Nonetheless, the five teachers and their students pointed out significant challenges that could impede AI-ERC roll-out. Teachers mentioned resistance to change, a lack of confidence when handling unfamiliar tools, and limited exposure to AI applications. Students reported restricted access, language barriers within some platforms, and uncertainty about how to use AI tools effectively. These shared challenges underline the urgent need for structured training programmes and institutional support—the very backbone of AI-ERC's teacher-training component and its emphasis on free, user-friendly tools (Chen et al., 2023).

A further key finding concerns perceptions of teacher preparedness. While some of the five teachers felt confident, others acknowledged gaps in their knowledge or experience when managing AI tools. Many students likewise perceived that their teachers were not fully prepared to employ AI-ERC in class (Pan & Lin, 2023). This mismatch reveals a gap between institutional expectations and current classroom realities. Continuous professional development, clear resource guides, and regular coaching on AI-ERC procedures (from selecting AI platforms to designing Stage 3 comparison tasks) therefore become essential.

Finally, teachers and students agreed on the indispensable role of institutional support. The five teachers called for reliable internet connections, classroom devices such as laptops, and clear guidelines on integrating AI-ERC effectively (Sylviane, 2014). Students echoed these needs, stressing that robust technological infrastructure and sustained training are critical for meaningful learning. Consequently, if AI-ERC is to become a sustainable pillar of English education, schools must invest not only in technology but also in capacity-building and long-term implementation strategies.

To sum up, the project demonstrates strong interest and positive attitudes toward AI-supported English teaching and learning. Yet for AI-ERC to realize its promise—helping learners master skimming, scanning, and higher-order comparison activities—it remains crucial to tackle the identified challenges in training, access, and institutional backing. With appropriate resources and guidance, the five teachers and their students stand to benefit fully from the transformative potential of AI-ERC in language education.

Conclusions

The AI-Enhanced Reading Comprehension (AI-ERC) strategy was developed as a direct response to the lack of structured methods for integrating Artificial Intelligence into the development of reading comprehension in English language classrooms. The strategy not only proposes the use of digital tools but also places strong emphasis on pedagogical planning, teacher guidance, and student engagement with meaningful texts. AI-ERC focuses on improving two core reading skills: skimming (to identify the main idea) and scanning (to locate specific details), by leveraging AI platforms to create personalized, accessible, and interactive learning experiences.

To ensure the effectiveness and adaptability of the strategy, a socialization and evaluation process was carried out with five practicing teachers. This step allowed educators to reflect on the strategy, provide feedback based on their classroom experience, and adapt its elements to suit different student needs and institutional contexts. During these collaborative sessions, teachers discussed the benefits and challenges of integrating AI into their reading instruction, shared tool preferences, and explored how AI-ERC could be realistically implemented across different learning environments. Their input helped refine the selection criteria for AI tools, adjust instructional timing, and align the strategy with institutional requirements and available resources.

The socialization of the strategy emphasized the importance of ongoing professional development. Teachers recognized that integrating AI meaningfully requires not only knowledge of digital tools but also pedagogical training that connects these tools with learning outcomes. As a result, workshops, collaborative planning meetings, and peer mentoring were proposed as essential components to support teachers in applying AI-ERC with confidence and effectiveness.

In conclusion, the AI-ERC strategy is more than a technological proposal; it is a pedagogically grounded approach that reinforces the role of the teacher while enhancing the learning experience through AI. The socialization process with teachers confirmed that with proper training, thoughtful planning, and continuous support, AI-ERC can become a sustainable and impactful method to improve reading comprehension in English.

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Conflict of interest

The authors declare that they have no conflicts of interest.

Declaration of responsibility of authorship

We, the authors of the aforementioned manuscript, DECLARE that we have directly contributed to its intellectual content, as well as to the genesis and analysis of its data; therefore, we are able to take public responsibility for it and accept that their names appear on the list of authors in the order indicated. Furthermore, we have complied with the ethical requirements of the aforementioned publication, having consulted the Declaration of Ethics and Publication Malpractice.

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