

INTEGRAÇÃO DO TPACK E DA IA NO ENSINO DE INGLÊS

INTEGRATION OF TPACK AND AI IN ENGLISH TEACHING

INTEGRACIÓN TPACK E IA EN ENSEÑANZA DEL INGLÉS

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Resumo: O objetivo central deste estudo é examinar como os professores interpretam e valorizam a influência da inteligência artificial (IA) nos processos de ensino de línguas estrangeiras no contexto colombiano. Para tanto, adotou-se uma abordagem metodológica quantitativa, baseada na aplicação de um questionário a um grupo de 30 professores do ensino fundamental e médio vinculados a instituições públicas. A pesquisa visa estabelecer os propósitos para os quais os educadores utilizam ferramentas de IA, os ajustes que realizaram em suas estratégias de ensino de inglês como língua estrangeira e os benefícios e desafios decorrentes de seu uso, particularmente à luz do modelo TPACK e da experiência prática dos atores educacionais envolvidos. As respostas fornecidas pelos 30 participantes — que concordaram em participar voluntariamente e assinaram o respectivo termo de consentimento livre e esclarecido — foram analisadas por meio de estatística descritiva. Os resultados revelam mudanças substanciais nas práticas pedagógicas, especialmente no que diz respeito aos mecanismos de avaliação, ao planejamento de atividades e à organização das aulas com o auxílio da geração de materiais. Entre as vantagens percebidas do uso da IA estão seu potencial para diversificar as abordagens pedagógicas e promover a autonomia dos alunos; por outro lado, os principais desafios identificados estão relacionados à confiabilidade das ferramentas, às potenciais limitações na aprendizagem decorrentes do uso inadequado e às dificuldades persistentes em garantir a integração efetiva dessas tecnologias nos contextos educacionais.

Palavras-chave: inteligência artificial. Ensino de línguas. Avaliação. Modelo TPACK.

Abstract: The main objective of this study is to examine how teachers interpret and value the influence of artificial intelligence (AI) on foreign language teaching processes within the Colombian context. To this end, a quantitative methodological approach was adopted, based on the application of a questionnaire to a group of 30 secondary and high school teachers affiliated with public institutions. The research aims to establish the purposes for which educators use AI tools, the adjustments they have made to their English as a Foreign Language teaching strategies, and the benefits and challenges that arise from their use, particularly in light of the TPACK model and the practical experience of the educational stakeholders.

The responses provided by the 30 participants were analyzed using descriptive statistics. The results reveal substantial changes in pedagogical practices, especially regarding assessment mechanisms, activity design, and the organization of class sessions supported by the assisted generation of materials. Among the perceived advantages of using AI are its potential to diversify pedagogical approaches and foster student autonomy; on the other hand, the main challenges identified are related to the reliability of the tools, potential limitations in learning resulting from inappropriate use, and the ongoing difficulties in ensuring the effective integration of these technologies into educational settings.

Key words: Artificial intelligence. Language teaching. Assessment. TPACK model.

Resumen: El objetivo central de este estudio es examinar cómo los docentes interpretan y valoran la influencia que ejerce la incorporación de la inteligencia artificial en los procesos de enseñanza de lenguas extranjeras en el contexto colombiano. Con este fin se adoptó un enfoque metodológico de carácter cuantitativo, basado en la aplicación de un instrumento tipo cuestionario a un grupo de 30 profesores de educación básica secundaria y media de instituciones públicas. La investigación se orienta a establecer los propósitos con los que los educadores recurren a herramientas de IA, los ajustes que han introducido en sus estrategias de enseñanza del inglés como lengua extranjera y los beneficios y tensiones que emergen de su uso, particularmente a la luz del modelo TPACK

y de la experiencia práctica de los actores educativos. Las respuestas aportadas por los participantes fueron examinadas mediante procedimientos de estadística descriptiva. Los resultados evidencian modificaciones sustanciales en las dinámicas pedagógicas, especialmente en relación con los mecanismos de evaluación, el diseño de actividades y la organización de las sesiones de clase apoyadas en la generación asistida de materiales. Entre las ventajas percibidas del empleo de la IA se destacan su potencial para diversificar ideas pedagógicas y fomentar la autonomía del estudiantado; por otro lado, los principales retos identificados se vinculan con la fiabilidad de las herramientas, las posibles limitaciones en el aprendizaje derivadas de un uso inadecuado y las dificultades que persisten para garantizar una integración efectiva de estas tecnologías en los entornos educativos.

Palabras clave: Inteligencia artificial. Enseñanza de lenguas. Evaluación. Modelo TPACK.

1. INTRODUCTION

The integration of artificial intelligence (AI) into the current educational context has necessitated a thorough review of how learning is understood, organized, and experienced. While AI offers new possibilities in terms of personalization, instant feedback, and access to dynamically generated content, these innovations do not represent a break with the fundamental principles of pedagogy; on the contrary, they offer an opportunity to enrich its theoretical frameworks and strengthen its practices. Far from replacing the humanistic principles that guide educational processes, the incorporation of AI presents an epistemological challenge: understanding how these systems can enhance the value of experience, strengthen intellectual autonomy, promote critical reflection, and expand the boundaries of the teaching-learning processes. From this connection emerges an expanded AI-based pedagogy that does not replace the human dimension of learning, but rather enriches it, makes it more accessible, and diversifies it.

The analysis begins with experiential learning, understood from Kolb's cyclical formulation as an ongoing process in which direct experience, reflection, conceptual development, and action are dynamically intertwined. In that sense Kolb and Kolb (2022) state that becoming an experiential educator requires more than acting as a facilitator or simply aligning teaching styles with learners' preferences. Experiential education is a complex relational process that demands a careful balance between attending to the learner and engaging deeply with the subject matter, while simultaneously integrating reflection on the underlying meaning of ideas with the practical skills needed to apply them effectively. From this standpoint, the work of an experiential educator is grounded in a strategic mediation that weaves together cognition, action, and emotional engagement, enabling learning to emerge as a situated and meaningful construction.

This approach not only requires mastery of active methodologies but also the development of a pedagogical sensitivity capable of interpreting students' evolving needs and guiding the transfer of knowledge to authentic contexts. Consequently, teaching becomes a dynamic practice of negotiation, adaptation, and critical accompaniment aimed at fostering transformative learning experiences (GANIRA & ODUNDO, 2023; BAALSRUD-HAUGE & JEONG, 2024). what is more, their curricular proposal, based almost exclusively on real-world

experiences and interdisciplinary integration, shows that the core of learning lies in the relevance and plausibility of the tasks, as well as in students' ability to connect these experiences with broader conceptual frameworks. In this sense, the study emphasizes that experience—and not the technological tool—constitutes the foundation that gives meaning to learning.

Nevertheless, the emergence of new technologies, and in particular artificial intelligence, introduces opportunities that can broaden the pedagogical scope of the experiential learning cycle without altering its fundamental principles. Mahmoud (2022) identifies seven essential components derived from the implementation of AI in teaching and learning: immediate feedback, personalized adaptation, recreation of authentic scenarios, continuous availability of language assistants, intelligent scaffolding in projects, enhanced collaboration, and automated content generation. More than mere complementary resources, these components represent transformations in how each phase of the experiential learning cycle can be implemented.

Thus, the concrete experience phase is expanded through simulations that reproduce realistic communicative situations, AI-generated interactions that allow for practice without social pressure, and environments previously impossible to replicate (MOHAMED. 2024). The reflective stage is intensified thanks to systems capable of analyzing linguistic productions and offering precise diagnoses of progress, discourse patterns, and areas for improvement. Conceptual abstraction is reinforced when AI organizes content, develops syntheses, or constructs visual representations that are tailored to the learner's level. Finally, active experimentation is diversified with personalized challenges, iterative recommendations for improving products, and guides for progressing toward more sophisticated projects. Overall, AI does not modify the epistemological essence of experiential learning, but it does amplify its scope, streamline its cycles, and enrich the experiences that comprise it.

Artificial intelligence-based technologies offer permanent and dynamic access to linguistic resources built from corpora, which are continuously updated and expanded. This availability fosters the creation of varied communicative situations that allow for the practice of multiple dimensions of language use, whether linked to the specific communicative context or to different types of interlocutors in the target language; that is, from everyday exchanges to formal interactions such as a professional interview. Likewise, these tools facilitate the integration of a multimodal perspective (KOLHATIN, 2025). This encompasses both written production in a diversity of discourse genres and oral production, through speech recognition systems that contribute to the development of pronunciation and fluency. Furthermore, visual memory is reinforced through the use of images, a resource that promotes more lasting, meaningful, and easily remembered learning processes (GOH, & ARYADOUST, 2025).

Similarly, these expanded access routes to the language can positively impact student motivation (YUAN & LIU 2025), by offering a wide range of communicative scenarios adaptable to different levels and educational contexts, always maintaining the focus on language use aligned with the particular interests and needs of each learner.

Likewise, given the rapid pace at which artificial intelligence is evolving, it is difficult to accurately anticipate the effects its integration will have on language teaching and learning processes. As Duong & Chen (2025) point out, even seemingly well-established applications, such as educational chatbots, present advantages and limitations that must be critically evaluated. Nevertheless, it is possible to identify areas where its impact appears imminent and potentially transformative: informal or incidental learning, strengthening learner autonomy, and assessment and self-assessment processes.

Before analyzing these areas, it is essential to consider that the introduction of AI in the classroom must be carefully planned and aligned with pedagogical objectives, explicitly defining whether the technology will act as a learning support tool, a guide, or a problem-solving and analysis tool (GU & YU, 2025). This integration should be governed by the principles established for the educational use of technology (NGUYEN, 2025), which include fostering a favorable and receptive climate for the incorporation of new tools (KANGWA et al., 2025). Similarly, it is crucial to anticipate and mitigate the so-called “novelty effect” associated with the use of AI (MIGUEL-ALONSO et al., 2024), given that the initial appeal of these tools partly due to their playful component (AHMED et al., 2025) can generate momentary increases in student motivation. However, this affective response tends to diminish over time, especially when it comes to oral communication skills, which requires teaching strategies that maintain engagement beyond the initial enthusiasm.

A systematic analysis of recent scientific literature identified a broad and diverse set of artificial intelligence-based tools being used for language teaching and learning. To organize this technological repertoire, the typology proposed by Seiz-Ortiz & Carrió-Pastor, 2024 was adopted, which classifies these resources according to their dominant pedagogical purpose. Based on this framework, the tools were grouped into five categories: language learning applications, virtual assistants, digital tutoring platforms, machine translation systems, and AI-based educational games. This classification not only facilitates the comparative evaluation of the resources but also allows for an understanding of the cognitive and didactic dynamics that each type of technology mobilizes in the language acquisition process.

1. Language Learning Apps

Apps like *Duolingo*, *Babbel*, *Rosetta Stone*, and *Memrise* represent highly controlled learning environments mediated by AI algorithms. These tools use machine learning models to dynamically adjust the difficulty level, select the most appropriate content, and generate personalized activity sequences based on data such as previous performance, frequency of use, and user error patterns. (BICKNELL et al., 2023) They integrate features such as automatic speech recognition (ASR), instant pronunciation feedback through acoustic analysis, and multimodal interactive exercises that enhance semantic recognition, grammatical construction, and lexical retrieval. From a computational perspective, these systems function as machine learning architectures that continuously refine their internal models based on millions of interactions, which explains their ability to generate highly adaptive learning

paths.

2. AI-Based Virtual Assistants

Voice assistants such as *Google Assistant*, *Amazon Alexa*, *Apple Siri*, among others have become emerging tools for real-time conversational practice. Their pedagogical relevance lies in their ability to deploy interactions situated in specific communicative scenarios, simulate conversational turns, and offer contextually relevant responses (BAKER et al., 2019). From a natural language processing (NLP) perspective, these devices integrate advanced speech understanding systems, intent detection models, and text-to-speech engines that allow for the creation of conversational experiences closely resembling human interaction. Furthermore, they can function as microlearning mediators, providing model phrases, phonetic corrections, or instant translations that expand the learner's linguistic exposure.

3. Digital Tutoring Platforms

Platforms like *iTalki* and *Verbling* represent a hybrid model of assisted learning: they combine human interaction with AI systems designed to optimize tutor selection and personalize the learning path (Woo & Choi, 2018). These environments employ recommendation algorithms (similar to those used in e-commerce or streaming systems) that analyze variables such as learning styles, communication goals, time availability, and the user's previous progress. In addition to facilitating access to native speakers, these platforms incorporate automated tools for performance tracking, analysis of student-produced discourse, and generation of progress reports.

4. Machine Translation Tools

Systems like *Google Translate* and *DeepL* represent the most significant advances in AI in the field of multilingual processing. Based on neural machine translation (NMT) models, these systems are capable of producing highly accurate translations thanks to the use of deep network architectures that learn distributed semantic representations of language (JIMÉNEZ-CRESPO, 2020). Their educational function is linked not only to text comprehension but also to the development of metalinguistic skills, since they allow for the comparison of syntactic structures, vocabulary expansion, and the analysis of interlinguistic correspondences. Due to their constant input of multilingual data, these tools constitute key support for widespread exposure to authentic linguistic patterns.

5. Educational Games with AI

Resources like *Lingodeer* and *FluentU* use gamification strategies combined with AI algorithms to create highly immersive learning environments (Zhang & Hasim, 2022). These tools integrate authentic videos, adaptive challenges, and immediate feedback mechanics designed to consolidate procedural memory and foster implicit learning. From a technical perspective, they operate using Dynamic Difficulty Adjustment (DDA) systems that adjust the level of difficulty based on the user's success rate, response speed, and persistence. They also

incorporate automated performance analysis to identify lexical or grammatical weaknesses and suggest personalized reinforcement activities.

In this broader context, The TPACK (Technological, Pedagogical, and Content) model has become an essential theoretical and methodological framework for understanding and guiding the coherent integration of digital technologies in educational settings. This conceptual framework posits that the effective incorporation of technology cannot be considered in isolation, but rather as the result of the dynamic interaction between three fundamental types of knowledge: technological, pedagogical, and subject matter (Figure 1).

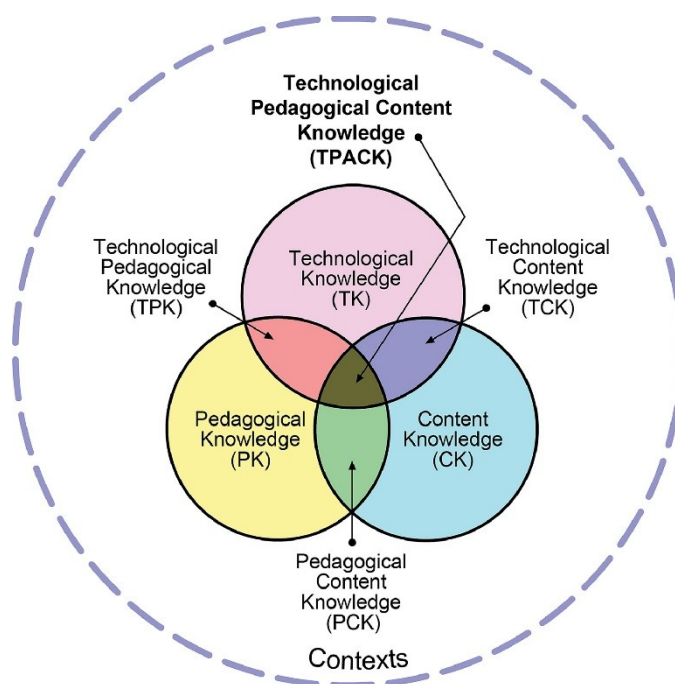


Figure 1 – TPACK model Taken from Petko et al., 2025.

1. *Technological Knowledge (TK)*: This domain encompasses the teacher's ability to recognize, select, and critically use the technological tools available in the educational ecosystem (SUKMA & PUM, 2025). It includes both the operational mastery of digital devices and platforms and the understanding of their possibilities, limitations, and pedagogical relevance. From this perspective, TK is not limited to instrumental use, but also involves evaluating how digital resources can transform teaching practices, enrich interaction, and facilitate knowledge construction.

2. *Pedagogical Knowledge (PK)*: This component encompasses the set of teaching theories, approaches, and methodologies that guide the design, implementation, and evaluation of educational processes. It involves understanding how students learn, selecting appropriate teaching strategies, managing the classroom, and promoting inclusive and meaningful learning environments (PHILLIPS et al., 2025). Within the TPACK framework, PK is essential for adapting technology and subject matter content to the characteristics, needs, and diversity of learners, thus ensuring more effective and contextualized interventions.

3. *Content Knowledge (CK)*: This refers to a deep, up-to-date, and structured mastery of the subject area being taught. This type of knowledge allows teachers to explain concepts precisely, establish relationships between ideas, anticipate learning difficulties, and design experiences that promote meaningful understanding of the content (CHANSANAM et al., 2025). In conjunction with the other components of the model, CK ensures that technology does not replace the teacher's expertise but rather enhances it by enabling new ways of representing, exploring, and communicating subject matter knowledge.

Taken together, the TPACK model proposes that true educational innovation arises when these three types of knowledge are interwoven in a balanced way, enabling a pedagogically sound and disciplinarily relevant use of technology. This approach is especially relevant in contemporary contexts where digital literacy, methodological flexibility, and disciplinary rigor are essential conditions for quality education (KAMAL et al, 2025). In this regard, a questionnaire was designed for this intervention to assess teachers' perceptions of the use of artificial intelligence within the framework of the TPACK model. The instrument was structured around the following components and their respective guiding questions:

1. Perception of Usefulness

- Do you believe that incorporating artificial intelligence can increase your effectiveness in teaching?
- Do you believe that artificial intelligence would facilitate the integration of open educational resources into your teaching practice?
- Do you believe that artificial intelligence could contribute to the personalization of teaching processes, addressing the individual needs of students?

2. Ease of Use

- Do you perceive artificial intelligence as an easy-to-use tool?
- Do you believe that artificial intelligence requires minimal effort to learn and use?
- Do you consider the artificial intelligence interface to be intuitive, accessible, and easy to navigate?

3. Intention to Use

- Do you intend to integrate artificial intelligence into your future teaching practice?
- Would you be willing to invest time and effort in acquiring skills to use artificial intelligence if you perceive that it can improve your professional practice?

- How likely are you to incorporate artificial intelligence into the regular development of your classes?

4. Attitude towards Technology

- How would you describe your general stance on the use of technology in the educational context?
- Do you believe that the use of technologies, such as artificial intelligence, can enrich the student learning experience?
- Do you perceive the use of technology in teaching processes as a fundamental requirement

for staying current and relevant in teaching practice?

Formulating the below-mentioned questions allows us to obtain relevant and in-depth information about teachers' perceptions, attitudes, and levels of willingness to adopt educational technologies based on artificial intelligence. It also makes it possible to identify potential areas of resistance or support needs during the processes of technological incorporation and implementation.

2. METHODS

The purpose of this study was to identify the main challenges, strategies, and potential benefits associated with the use of artificial intelligence in English language teaching in secondary schools in Colombia. The research employed a quantitative approach for understanding of the phenomenon (CRESWELL, 2014). This approach proved relevant given the increasing complexity of using emerging technologies in educational processes and the need to consider both teachers' perceptions and experiences. A non-probability convenience sample of thirty English teachers was selected. The inclusion criterion was that participants had incorporated, partially or continuously, artificial intelligence tools into their language teaching and learning practices. This criterion ensured that the teachers had prior experience that would facilitate a critical evaluation of their use and pedagogical impact.

Data collection was carried out using a structured questionnaire consisting of 20 items developed in a five-point Likert scale format (1 = Strongly agree; 2 = Agree; 3 = Neither agree nor disagree; 4 = Disagree; 5 = Strongly disagree). This scale was chosen due to its widespread acceptance in educational research, as well as its usefulness in measuring perceptions, attitudes, and levels of acceptance toward technological innovations. The item construction was based on a comprehensive review of recent literature on the teaching and learning process of English in Colombia and on the pedagogical integration of artificial intelligence, which ensured the instrument's conceptual validity.

The entire research process was geared toward answering the two central questions of the study:

1. What is the impact of artificial intelligence on the transformation of teaching practices, specifically in classroom activities, teaching methods, educational resources, teacher work, and student assessment processes?

2. What are the benefits, challenges, and drawbacks that teachers face when incorporating artificial intelligence into their pedagogical experiences and in the teaching of English?

The analysis of these questions will generate relevant evidence to understand the current role of artificial intelligence in language education and provide recommendations to strengthen its ethically, pedagogically, and didactically sound integration into English language

teaching processes.

3. RESULTS

To examine the metric quality of the questionnaire administered to teachers regarding the use of artificial intelligence in English language teaching, the instrument's internal consistency was evaluated using Cronbach's alpha coefficient. The analysis yielded a value of 0.821, indicating an adequate and acceptable level of reliability for educational studies, and demonstrating a moderately strong correlation among the items that make up the scale. This coefficient is primarily influenced by three factors: the dimensionality of the question set, the degree of covariation among the questions, and the total number of items included.

The result obtained suggests that the questions exhibit sufficient correlation to coherently measure teachers' perceptions of artificial intelligence, thus supporting the instrument's internal validity. Table 1 presents the percentage distribution of responses corresponding to items 1 to 5, which inquire about the use of artificial intelligence in different aspects of English teaching: (1) frequency of use for educational purposes, (2) use for generating materials adjusted to the level of the students, (3) obtaining useful answers for language teaching, (4) use of AI for task assignment and (5) use of AI to provide feedback in class.

Table 1. Effectiveness of Artificial Intelligence in Foreign Language Teaching Processes

Response Categories	%		%		%		%		%	
<i>Strongly Agree</i>	6	20	9	30.0	9	30.0	7	23.3	5	16.6
<i>Agree</i>	19	63.3	17	56.7	16	53.3	18	60.0	22	73.3
<i>Neither Agree nor Disagree</i>	4	13.3	2	6.7	4	13.3	5	16.6	3	10.0
<i>Disagree</i>	1	3.3	2	6.7	1	3.3	0	0	0	0
<i>Strongly disagree</i>	0	0	0	0	0	0	0	0	0	0
<i>Total responses</i>	30		30		30		30		30	
<i>Items 1 to 5</i>	1		2		3		4		5	

The following results, which carry the most weight, relate to the effectiveness of artificial intelligence in foreign language teaching processes, based on the information summarized in the table above. Firstly, the data show that 63.3% of teachers report frequently using artificial intelligence for educational purposes. Similarly, 56.7% indicate that they often use this technology to generate English teaching materials tailored to both students' skills and the pedagogical context in which they teach. Furthermore, 53.3% of participants indicated that they regularly receive relevant and useful answers from artificial intelligence to questions related to language teaching. Regarding the use of artificial intelligence for task assignment, 60.0% reported using it frequently for this purpose. Finally, the highest percentage was observed in relation to feedback: 73.3% of teachers stated that they regularly use artificial intelligence to provide feedback and guidance to students during English classes.

Taken together, the analysis of these five initial items suggests that teachers routinely integrate artificial intelligence as a pedagogical support tool in foreign language teaching, which highlights a favorable trend towards its adoption in instructional activities. Table 2, entitled "Strategies for the Use of Artificial Intelligence in English Language Teaching," presents the percentage distribution for questions 6 through 10 of the questionnaire. These questions explore various pedagogical practices associated with the use of artificial intelligence: (6) using AI to develop learning materials, (7) recommending that students use AI to support their foreign language acquisition, (8) regulating students' level of technological interaction to avoid dependence, (9) suggesting the use of AI to obtain responses of greater cognitive complexity, and (10) systematically verifying the content and responses generated by AI by the teacher.

Table 2. Strategies for using artificial intelligence

<i>Response Categories</i>	<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>		<i>%</i>	
<i>Strongly Agree</i>	20	66.6	8	26.7	7	23.3	4	13.3	24	80.0
<i>Agree</i>	7	23.3	20	66.6	20	66.6	23	76.6	6	20.0
<i>Neither Agree nor Disagree</i>	2	6.7	2	6.7	3	10.0	3	10.0	0	0
<i>Disagree</i>	1	3.3	0	0	0	0	0	0	0	0
<i>Strongly disagree</i>	0	0	0	0	0	0	0	0	0	0
<i>Total responses</i>	30		30		30		30		30	
<i>Items 6 to 10</i>	6		7		8		9		10	

Based on the data presented above, 66.6% of foreign language teachers strongly agree with the use of artificial intelligence for developing learning materials. Consistently, 66.6% also agree with recommending that students use this technology to support their foreign language acquisition. Similarly, 66.6% of participants agree with the need to regulate and balance students' interaction with artificial intelligence to prevent potential technological dependence. Furthermore, a larger percentage, 76.6%, indicated their agreement with suggesting that students use artificial intelligence to obtain answers of greater cognitive complexity. Finally, 80% of teachers stated that they systematically verify both the materials and the responses generated by artificial intelligence before integrating them into their teaching practice. Taken together, these results suggest that teachers agree on the importance of using artificial intelligence with a clearly defined educational purpose and through careful planning that ensures its pedagogical relevance.

Continuing with the analysis, Table 3, entitled "Capabilities of Artificial Intelligence in Foreign Language Teaching," presents the percentage distribution of responses corresponding to items 11 through 18 of the questionnaire. These items examine various dimensions associated with the pedagogical potential of artificial intelligence: (11) its capacity to facilitate personalized learning experiences, (12) its contribution to improving English comprehension, (13) the relevance and accuracy of its responses to specific user requirements, (14) its potential to strengthen language learning, (15) its contribution to the efficiency and

effectiveness of teaching processes, (16) its usefulness in supporting vocabulary and grammar comprehension, (17) its contribution to the development of the four communicative skills (speaking, listening, writing, and reading), and (18) its ability to answer questions during in-class practice activities.

Table 3. Capabilities of Artificial Intelligence in Foreign Language Teaching

Response Categories	%		%		%		%		%		%		%		%	
Strongly Agree	4	13.3	18	60.0	14	46.6	10	33.3	10	33.3	6	20.0	12	40.0	7	23.3
Agree	24	80.0	9	30.0	16	53.3	19	63.3	20	66.6	24	80.0	18	60.0	20	66.6
Neither Agree nor Disagree	2	10.0	3	10.0	0	0	1	3.3	0	0	0	0	0	0	3	10.0
Disagree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Strongly disagree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total responses	30		30		30		30		30		30		30			
Items 11 to 18	11		12		13		14		15		16		17		18	

The results show that items 11 and 16 registered the highest levels of agreement, reaching 80% in both cases. These values indicate that the majority of teachers agree that artificial intelligence (AI) facilitates highly personalized language learning experiences and, additionally, contributes significantly to the understanding of English vocabulary and grammar. Similarly, the responses to item 12 show that 60% of participants strongly agreed that AI can strengthen students' overall understanding in the English acquisition process, suggesting a positive perception of its pedagogical potential. Regarding item 13, the data reflects that 53.3% of teachers believe that AI responds appropriately and relevantly to the specific needs of the user, reinforcing the idea that these tools have the capacity to adapt to different learning profiles. Likewise, item 14 reveals that 63.3% of respondents recognize that AI has the potential to substantially improve English language learning, confirming a widespread trend toward a favorable assessment of these technologies in the educational field.

The results for item 15 indicate that 66.6% of teachers perceive that AI increases both the efficiency and effectiveness of English language teaching processes. This finding is consistent with previous studies that highlight AI's mediating role in optimizing tasks, feedback, and teaching strategies. Similarly, items 17 and 18 indicate that 60% and 66% of teachers, respectively, believe that AI contributes to the development of the four communicative skills—listening, speaking, reading, and writing—and also provides timely answers to questions that arise during language practice in the classroom. Taken together, these data reflect a broadly favorable perception among foreign language teachers, who recognize AI as offering a set of significant capabilities and tangible benefits for English

language teaching.

Finally, Table 4, entitled Challenges of the Use of Artificial Intelligence in English Language Teaching, includes two negative statements (19. "Artificial intelligence does not respond to relevant queries" and 20. "Artificial intelligence can reduce interaction between teachers and students"). The inclusion of these items aims to obtain a more balanced and nuanced view of teachers' attitudes, allowing us to identify not only the potential benefits, but also the concerns and limitations perceived regarding the use of AI in educational contexts.

Table 4. Challenges of using Artificial Intelligence in English teaching

<i>Response Categories</i>	<i>%</i>		<i>%</i>	
<i>Strongly Agree</i>	0	0	0	0
<i>Agree</i>	0	0	0	0
<i>Neither Agree nor Disagree</i>			1	3.3
<i>Disagree</i>	6	20.0	20	66.6
<i>Strongly disagree</i>	24	80.0	9	30.0
<i>Total responses</i>	30		30	
<i>Items 19 to 20</i>	19		20	

4. DISCUSSION

The evidence obtained shows that artificial intelligence is a significant resource for optimizing teaching and learning processes, contributing to the development of diverse skills in students, such as reading, writing, information analysis, critical thinking, problem-solving, and research skills. The high frequency of use and the positive evaluation that English teachers attribute to these tools indicate that their incorporation has been widely accepted and perceived as useful in pedagogical practice. Furthermore, teachers not only employ AI but also strategically integrate it into their classroom dynamics, promoting its responsible use by students and regulating its use to prevent dependency.

Consistently, AI is seen as a key facilitator for enriching the learning experience and strengthening English communication skills, demonstrating its transformative potential in foreign language teaching. One of its most significant contributions is the ability to personalize learning, adjusting content and difficulty levels to each student's specific needs; however, the importance of maintaining a balance with human interaction to ensure holistic development is recognized. While these tools facilitate writing, editing, and feedback processes, it is essential to educate students on the ethical use of technology to prevent plagiarism and promote genuine learning. Despite the aforementioned benefits, challenges persist related to over-reliance on and superficiality in language acquisition, requiring strategies aimed at fostering reflective and formative use.

Finally, it is relevant to mention that the integration of AI into English language teaching becomes even more effective when framed within the TPACK model, as this

framework allows teachers to coherently link technological knowledge with pedagogical decisions and linguistic content. Thanks to this interaction, teachers can select AI tools that specifically address the communicative objectives of the subject area, design more relevant activities, and promote deep learning that combines language comprehension with the meaningful use of technology. Furthermore, the TPACK model contributes to creating more integrated and pedagogically sound learning environments, avoiding improvised practices and strengthening pedagogical decision-making. In this way, the model not only improves the quality of AI-supported English language teaching but also fosters the development of more authentic, ethical, and sustainable experiences within the educational process.

REFERENCES

- BAALSRUD HAUGE, J.; JEONG, Y. **Does the improvement in AI tools necessitate a different approach to engineering education?**. In: ANDERSSON, J.; SHRIKANT, J.; MALMSKÖLD, L.; HANNING, F. (eds.). *Sustainable Production through Advanced Manufacturing, Intelligent Automation and Work Integrated Learning*. Amsterdam: IOS Press, 2024. p. 709-718.
- BAKER, T.; SMITH, L.; ANISSA, N. **Educ-AI-tion Rebooted? Exploring the Future of Artificial Intelligence in Schools and Colleges**. London: Nesta, 2019.
- BICKNELL, K.; BRUST, C.; SETTLES, B. **How Duolingo's AI learns what you need to learn: the language-learning app tries to emulate a great human tutor**. *IEEE Spectrum*, online, 2023.
- CHANSANAM, W.; KWANGMUANG, P.; DETTHAMRONG, U.; LI, C. **Transforming teacher education with TPACK: insights from a multi-dimensional analytical approach**. *Educational Process: International Journal*, v. 17, e2025381, 2025.
- CRESWELL, J. W. **Research Design: Qualitative, Quantitative and Mixed Methods Approaches**. 4. ed. Sage Publications, 2014.
- DUONG, T. N. A.; CHEN, H. L. **An AI chatbot for EFL writing: students' usage tendencies, writing performance, and perceptions**. *Journal of Educational Computing Research*, v. 63, 2025. DOI: 10.1177/07356331241312363.
- GANIRA, K. L.; ODUNDO, P. A. **Experiential learning style models on implementation of pre-primary school social studies curriculum: systematic review of related literature**. *Asian Journal of Education and Social Studies*, v. 42, n. 1, p. 9–20, 2023.
- GOH, C. C.; ARYADOUST, V. **Developing and assessing second language listening and speaking: does AI make it better?**. *Annual Review of Applied Linguistics*, p. 1–21, 2025.
- GU, W.; YU, Z. A bibliometric analysis of the application of AI chatbots in language learning contexts. *Quality & Quantity*, v. 59, n. 1, p. 639–661, 2025.

JIMÉNEZ-CRESPO, M. A. **The “technological turn” in translation studies: are we there yet? A transversal cross-disciplinary approach.** Translation Spaces, v. 9, n. 2, p. 314–341, 2020.

KAMAL, N.; AMIN, H.; JAHANGIR, J.; LODHI, M. A. **Exploring English language teachers’ TPACK competence: a systematic review of the past researches.** International Journal of Social Sciences Bulletin, v. 3, n. 4, p. 754–762, 2025.

KANGWA, D.; MSAFIRI, M. M.; FUTE, A. **Exploring the factors that promote a balance between academic integrity and the effective use of GenAI tools in higher education: a systematic review.** Journal of Computer Assisted Learning, v. 41, n. 5, e70109, 2025.

KOLB, A.; KOLB, D. **Experiential learning theory as a guide for experiential educators in higher education.** Experiential Learning and Teaching in Higher Education, v. 1, p. 38, 2022. DOI: 10.46787/elthe.v1i1.3362.

KOLHATIN, A. O. **From automation to augmentation: a human-centered framework for generative AI in adaptive educational content creation.** In: CEUR Workshop Proceedings, v. 4060, p. 143–195, 2025.

MAHMOUD, R. H. **Implementing AI-based conversational chatbots in EFL speaking classes: an evolutionary perspective.** 2022. DOI:[10.21203/rs.3.rs-1911791/v1](https://doi.org/10.21203/rs.3.rs-1911791/v1)

MIGUEL-ALONSO, I.; CHECA, D.; GUILLEN-SANZ, H.; BUSTILLO, A. **Evaluation of the novelty effect in immersive virtual reality learning experiences.** Virtual Reality, v. 28, n. 1, p. 27, 2024.

MOHAMED, A. O. **The effect of simulating virtual scenes using artificial intelligence techniques in producing various media materials.** J Ecohumanism, v. 3, n. 8, p. 816–836, 2024.

NGUYEN, K. V. **The use of generative AI tools in higher education: ethical and pedagogical principles.** Journal of Academic Ethics, p. 1–21, 2025.

PETKO, D.; MISHRA, P.; KOEHLER, M. J. **TPACK in context: an updated model.** Computers and Education Open, v. 8, 100244, 2025.

PHILLIPS, M.; BARAN, E.; MISHRA, P.; KOEHLER, M. J. (eds.). **Handbook of Technological Pedagogical Content Knowledge (TPACK) for Educators.** Taylor & Francis, 2025.

SEIZ ORTIZ, R.; CARRIÓ PASTOR, M. L. **Classification of technology-based language learning resources according to pedagogical and functional criteria.** RAEL: Revista Electrónica de Lingüística Aplicada, v. 23, p. 19–33, 2024.

SUKMA, N.; PUM, W. **BEST: an instructional design model to empower graduate student self-efficacy in research methodology through TPACK integration.** Interdisciplinary Journal of Information, Knowledge & Management, v. 20, 2025.

WOO, J. H.; CHOI, H. **Systematic review for AI-based language learning tools.** arXiv preprint, arXiv:2111.04455, 2021. Disponível em: <https://arxiv.org/abs/2111.04455>

YUAN, L.; LIU, X. **The effect of artificial intelligence tools on EFL learners' engagement, enjoyment, and motivation.** Computers in Human Behavior, v. 162, 108474, 2025.

ZHANG, S.; HASIM, Z. **Gamification in EFL/ESL instruction: a systematic review of empirical research.** Frontiers in Psychology – Educational Psychology, v. 13, 2022. DOI: [10.3389/fpsyg.2022.1030790](https://doi.org/10.3389/fpsyg.2022.1030790).