Sage Sphere of Technology, Sciences, Discoveries and Society

ISSN: 3091-1915

Vol. 4 Núm. 1 (2026)

EDITORIAL JOGB

SSTSDS-Vol.4. N1. 174

La inteligencia artificial como copiloto: revolucionando el aprendizaje personalizado de idiomas

AI as a Copilot: Revolutionizing Personalized Language Learning

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Enviado: 31-08-2026 **Revisado:** 28-10-2026
Aceptado: 15-11- 2026 **Publicado:** 17-11-2026

Cómo citar este artículo:

Fernández Cando, D. A., Montaño Ormaza, D. E., Castro Mosquera, B. P., Idrobo Bermeo, Y. V., & Panchi Chasiloa, M. J. (2026). La inteligencia artificial como copiloto: revolucionando el aprendizaje personalizado de idiomas. *Sage Sphere of Technology, Sciences, Discoveries And Society*, *4*(1), 1-25. https://doi.org/10.63688/wfawq873

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ABSTRACT

This study analyzed the contribution of artificial intelligence as a co-pilot in personalized language learning and examined its educational applications through a qualitative narrative review with a descriptive-analytical scope. The documentary corpus comprised 15 scientific publications published between 2023 and 2026, selected according to their thematic relevance. The publications were compared across three analytical axes: artificial intelligence and personalized language learning; conversational interaction, automated feedback, and language skill development; and learner motivation, teacher involvement, and educational challenges. The reviewed literature included empirical investigations, systematic reviews, meta-analyses, and studies of learners' experiences conducted in different educational contexts. The findings identified opportunities for individualized learning assistance, conversational practice, pronunciation development, automated writing feedback, and learner engagement. However, improvements in specific language skills did not independently establish the effectiveness of comprehensive adaptive learning systems. Furthermore, the potential contribution of artificial intelligence to educational inclusion depended on technological accessibility, instructional design, and teacher guidance. The conclusions were interpretative and could not be generalized across educational contexts due to methodological heterogeneity and the absence of an exhaustive search protocol. Future research should evaluate long-term learning outcomes, learner autonomy, and the effectiveness of AI-supported instructional strategies in diverse educational settings.

Keywords: artificial intelligence; personalized language learning; conversational chatbots; automated feedback; learner autonomy.

RESUMEN

La investigación analizó la contribución de la inteligencia artificial como copiloto en el aprendizaje personalizado de idiomas y examinó sus aplicaciones educativas mediante una revisión narrativa de enfoque cualitativo y alcance descriptivo-analítico. El corpus documental estuvo integrado por 15 publicaciones científicas difundidas entre 2023 y 2026, seleccionadas según su pertinencia temática. Los documentos se contrastaron en tres ejes: inteligencia artificial y aprendizaje personalizado de idiomas; interacción conversacional, retroalimentación automatizada y desarrollo de habilidades lingüísticas; y motivación del estudiante, participación docente y desafíos educativos. La literatura examinada incluyó investigaciones empíricas, revisiones sistemáticas, metaanálisis y estudios sobre experiencias de aprendizaje desarrollados en distintos contextos educativos. Los hallazgos identificaron oportunidades para la asistencia individualizada, la práctica conversacional, el desarrollo de la pronunciación, la retroalimentación automatizada en la escritura y la participación estudiantil. Sin embargo, las mejoras en habilidades lingüísticas específicas no demostraron por sí mismas la eficacia de sistemas integrales de aprendizaje adaptativo. Asimismo, la posible contribución de la inteligencia artificial a la inclusión educativa dependió del acceso tecnológico, el diseño pedagógico y la orientación docente. Las conclusiones fueron interpretativas y no permitieron generalizar los resultados debido a la heterogeneidad metodológica y la ausencia de un protocolo de búsqueda exhaustivo. Se recomienda desarrollar investigaciones que evalúen los resultados de aprendizaje a largo plazo, la autonomía estudiantil y la eficacia de las estrategias educativas apoyadas en inteligencia artificial en diferentes contextos.

Palabras clave: inteligencia artificial; aprendizaje personalizado de idiomas; chatbots conversacionales; retroalimentación automatizada; autonomía del estudiante.

Doi: https://doi.org/10.63688/wfawq873

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1. INTRODUCTION

Language learning plays an essential role in communication, academic development, and participation in an increasingly interconnected world. However, traditional teaching approaches do not always respond to the different proficiency levels, learning rhythms, interests, and individual needs of students. In this context, artificial intelligence (AI) has emerged as a technological resource capable of supporting language education through personalized activities, interactive communication, and continuous feedback. Du and Daniel (2024) examined the use of AI-powered chatbots in English-speaking practice, while Cislowska and Pena-Acuna (2024) reviewed the integration of conversational chatbots into additional language education. Both studies highlight the growing relevance of AI in language teaching, although their findings should be interpreted according to the contexts and methodologies examined.

In this study, artificial intelligence as a co-pilot is understood as a complementary technological resource that supports learners throughout the language acquisition process without replacing the teacher. Personalized language learning refers to adapting educational activities, explanations, and learning resources to students' proficiency levels and individual needs. Adaptive learning involves adjusting the difficulty and type of activities according to learners' progress, while learner autonomy refers to their ability to organize, monitor, and take responsibility for their own learning. These concepts are related but represent different dimensions of technology-supported education (Lo et al., 2024; Wu, 2024).

The incorporation of AI-powered chatbots has expanded opportunities for interaction in foreign language education. These tools allow students to engage in conversations, ask questions, practice vocabulary, and explore different communicative situations. Du and Daniel (2024) analyzed 24 studies on chatbot-assisted English-speaking practice and identified potential benefits for speaking confidence, pronunciation, and learner engagement. Similarly, Lyu et al. (2025), through a meta-analysis of comparative studies, found a positive overall effect of chatbots on second-language learning. Nevertheless, their findings also indicate that educational outcomes depend on the characteristics of the technology and the conditions under which it is implemented.

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One of the main contributions of artificial intelligence to language education is its capacity to provide individualized learning support. Through conversational interaction, students can request explanations, practice grammatical structures, and work on exercises adapted to their needs. Karataş et al. (2024) examined the use of ChatGPT in foreign language education and identified positive student perceptions regarding writing, grammar, vocabulary, and motivation. In addition, Meniado et al. (2024) explored the experiences of Thai and Vietnamese learners using ChatGPT for second-language writing, identifying its usefulness for generating ideas, organizing information, and improving written drafts.

Immediate feedback represents another relevant aspect of AI-assisted language learning. Students can receive suggestions about grammatical errors, vocabulary selection, sentence construction, and written expression while completing learning activities. Mahapatra (2024) investigated ChatGPT as a formative feedback tool and reported improvements in the academic writing skills of undergraduate English learners. Likewise, Polakova and Ivenz (2024) examined the effects of ChatGPT feedback on EFL students' writing and identified improvements in several writing dimensions. These findings suggest that AI can support revision and language development, although feedback still requires critical evaluation and appropriate teacher guidance.

The development of oral communication skills is also an important area of application. Automatic speech recognition technologies allow learners to practice pronunciation, identify difficulties, and repeat exercises according to their individual progress. Inceoglu et al. (2024) examined how English learners interacted with automatic speech recognition systems during autonomous pronunciation practice. Their findings highlighted the importance of learners' attitudes and interaction patterns when using these technologies. Du and Daniel (2024) also identified speaking practice as an important application of conversational chatbots in foreign language education.

Beyond language performance, artificial intelligence may contribute to learner motivation and confidence by creating interactive environments in which students can practice at their own pace. Song and Song (2023) investigated the effects of ChatGPT-assisted learning on academic writing and motivation among EFL students. Their findings indicated improvements in writing performance and positive changes in learning motivation. Similarly, Wu (2024), through a meta-analysis of artificial intelligence interventions in

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second-language learning, identified positive effects on language outcomes and relevant social-emotional factors, including motivation and language anxiety. However, these results should not be interpreted as evidence that all AI applications produce the same educational benefits.

The integration of these technologies also requires attention to the teacher's role. Educators remain responsible for selecting appropriate digital resources, designing meaningful activities, evaluating AI-generated information, and guiding students in the responsible use of technology. Lo et al. (2024) identified both educational opportunities and challenges in the application of ChatGPT to English language teaching, including personalized learning, teacher support, inaccurate information, privacy concerns, and academic integrity. Furthermore, Lee et al. (2026) examined the integration of generative AI in language classrooms and emphasized the importance of pedagogical guidance when incorporating these tools into instructional practices.

Despite the opportunities offered by artificial intelligence, several limitations remain relevant. AI-generated responses may contain inaccurate information, lack contextual understanding, or provide explanations that do not correspond to learners' actual needs. Xiao et al. (2026) identified the importance of critical thinking, information literacy, and ethical considerations in the use of ChatGPT for EFL writing instruction. Similarly, Boudouaia et al. (2024) examined the use of ChatGPT-4 in English writing and reported positive learning outcomes, while highlighting the importance of understanding students' acceptance and use of the technology. These considerations demonstrate that technological access alone does not guarantee meaningful language acquisition.

Research on AI-assisted language education has also expanded through systematic reviews and meta-analyses. Fleckenstein et al. (2023) examined the effects of automated feedback on students' writing performance, providing evidence about the educational relevance of individualized feedback. Cislowska and Pena-Acuna (2024) reviewed chatbot applications in additional language education, while Lyu et al. (2025) synthesized comparative research on chatbot effectiveness. Du and Daniel (2024) focused specifically on speaking practice, whereas Karataş et al. (2024) explored students' experiences with ChatGPT in foreign language instruction. Together, these publications provide complementary perspectives,

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although differences in research design, participants, and educational settings must be considered when interpreting their results.

The research gap addressed in this article concerns the relationship between personalized learning, immediate feedback, conversational interaction, learner motivation, and the teacher's role in AI-assisted language education. Although previous studies have examined these dimensions through different approaches, their combined contribution to a more individualized, effective, and inclusive language learning experience requires further analysis. The review also considers the need to distinguish improvements in specific language skills from broader claims about educational effectiveness and inclusion.

The relevance of this topic lies in understanding how emerging technologies can support more flexible, interactive, and learner-centered language education. Examining artificial intelligence as a co-pilot may contribute to identifying pedagogical strategies that strengthen communication skills, promote learner autonomy, and encourage responsible technological integration. This perspective recognizes AI as a support resource whose educational value depends on its appropriate use, the quality of its feedback, and the active participation of teachers and students.

The present article aims to analyze the contribution of artificial intelligence as a co-pilot in personalized language learning through a narrative review of scientific literature. The analysis focuses on adaptive learning, conversational chatbots, immediate feedback, pronunciation development, learner motivation, autonomy, and the pedagogical role of teachers. Based on this purpose, the following research question is proposed: How does artificial intelligence, as a co-pilot, contribute to a more personalized, effective, and inclusive language learning experience?

2. METHODOLOGY

a) Research Design

The research was developed through a narrative review of scientific literature, using a qualitative approach with a descriptive-analytical scope. Contributions related to artificial intelligence, personalized language learning, adaptive educational technologies, conversational chatbots, automated feedback, and the development of language skills were examined without an experimental design or primary data collection.

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The documentary analysis was conducted through thematic reading and interpretative comparison of the 15 scientific publications identified in Table 1. The objectives, educational contexts, types of evidence, contributions, and limitations reported in the studies were distinguished. The selection was intentional and thematic; no systematic review protocol was documented.

No classroom observations, surveys, interviews, or experimental interventions were conducted. Therefore, the educational recommendations derived from the synthesis were presented as analytical interpretations rather than as empirical findings obtained directly from students or educational institutions.

The research design corresponded to a narrative review rather than a systematic review. The documentary corpus included scientific publications from 2023 to 2026 addressing the integration of artificial intelligence into language education. The review did not establish an exhaustive search of all available studies, and no undocumented database searches or exclusion records were attributed to the research.

The comparative reading considered the educational context of each publication and distinguished empirical research, systematic reviews, meta-analyses, and studies focusing on technological and pedagogical applications. No formal risk-of-bias assessment was performed, and no causal inferences were established between heterogeneous research findings.

b) Documentary Corpus

The documentary review was delimited to the 2023–2026 period. The preliminary corpus comprised 15 scientific publications addressing artificial intelligence in language education, particularly the personalization of learning, conversational interaction, automated feedback, language skill development, motivation, and the pedagogical role of teachers.

The selected publications included research conducted in different educational contexts, particularly English as a Foreign Language (EFL), English as a Second Language (ESL), and second-language learning. The methodological and contextual differences between these investigations were considered during the analysis to avoid generalizing findings across educational populations.

Studies examining AI-powered chatbots, generative artificial intelligence, automatic speech recognition, and automated writing feedback were analyzed. Their contributions

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were compared with the research objective, paying particular attention to the relationship between technological support and individualized language learning experiences.

The documentary corpus was organized around thematic descriptors such as "artificial intelligence," "personalized language learning," "AI-powered chatbots," "adaptive learning," "automated feedback," "foreign language education," "learner motivation," and "language skill development." These descriptors define the thematic scope of the review and are not presented as verified search equations from specific databases.

The 15 publications were considered according to thematic relevance and bibliographic identification. However, no complete and verifiable record of database searches, discarded publications, or individual reasons for exclusion was available. Consequently, the study maintained its narrative and non-exhaustive character.

Table 1 presents the 15 publications, their research areas, main analytical approaches, and principal thematic categories according to their predominant contributions.

Table 1

Characterization of the 15 Scientific Publications and Assignment to Methodological Categories

No.	Author(s) and Year	Research Area	Main Analytical Approach	Main Category
1	Boudouaia et al. (2024)	AI-assisted language learning	ChatGPT-4 and English writing development	III. Feedback and language skills
2	Cislowska and Pena-Acuna (2024)	Conversational AI	Integration of chatbots in additional language education	II. Chatbots and interaction
3	Du and Daniel (2024)	Foreign language speaking	AI-powered chatbots for English-speaking practice	II. Chatbots and interaction
4	Fleckenstein et al. (2023)	Automated writing feedback	Effects of automated feedback on writing performance	III. Feedback and language skills
5	Inceoglu et al. (2024)	Pronunciation development	Autonomous pronunciation practice using speech recognition	III. Feedback and language skills
6	Karataş et al. (2024)	AI in foreign language education	ChatGPT use and language learning experiences	I. AI and personalization
7	Lee et al. (2026)	Generative AI in education	Integration of generative AI into language classrooms	V. Teachers and ethical challenges

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8	Lo et al. (2024)	AI in ESL/EFL education	Educational applications and limitations of ChatGPT	V. Teachers and ethical challenges
9	Lyu et al. (2025)	Chatbot-assisted language learning	Effectiveness of chatbots in second-language learning	II. Chatbots and interaction
10	Mahapatra (2024)	Academic writing	ChatGPT as a formative feedback tool	III. Feedback and language skills
11	Meniado et al. (2024)	Second-language writing	Learner experiences and perceptions of ChatGPT	I. AI and personalization
12	Polakova and Ivenz (2024)	EFL writing development	Effects of ChatGPT feedback on writing skills	III. Feedback and language skills
13	Song and Song (2023)	AI-assisted language learning	Academic writing performance and learner motivation	IV. Motivation and autonomy
14	Wu (2024)	Artificial intelligence in L2 learning	Learning outcomes and social-emotional factors	IV. Motivation and autonomy
15	Xiao et al. (2026)	Generative AI and language education	ChatGPT-powered writing instruction and educational considerations	V. Teachers and ethical challenges

Note. Each publication was assigned to one principal category for classification purposes, although individual studies may contribute to more than one thematic area. The classification does not imply methodological equivalence between empirical investigations, systematic reviews, meta-analyses, and conceptual contributions. The bibliographic information and thematic assignment should be checked against the original publications before final submission.

c) Documentary Inclusion Criteria

Documentary relevance was evaluated according to the research objective, bibliographic identification, and the educational contributions addressed in the 15 selected publications. The following criteria guided the thematic assessment of the documentary corpus:

1. Thematic relevance. Relationship of the investigations with artificial intelligence, personalized language learning, adaptive educational technologies, conversational chatbots, automated feedback, and foreign language education.

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2. Educational contribution. Analysis of language teaching practices, learning technologies, communication skills, pronunciation development, academic writing, vocabulary acquisition, learner motivation, autonomy, and feedback strategies.
3. Scientific identification. Availability of sufficient bibliographic information to identify the authors, publication year, research title, academic journal, and corresponding Digital Object Identifier (DOI).
4. Methodological characteristics. Identification of the research approach, educational context, type of evidence, participants, and analytical procedures whenever these elements were documented in the original publication.
5. Contribution to the research objective. Relevance of the findings, theoretical foundations, or pedagogical recommendations for understanding the contribution of artificial intelligence as a co-pilot in personalized language learning.

These criteria describe the thematic evaluation of the documents included in the preliminary corpus. No complete record of excluded publications or their individual exclusion reasons was available; consequently, a formal retrospective eligibility process was not presented.

No methodological quality scores were assigned, and no formal risk-of-bias assessment was performed. The findings were interpreted by distinguishing empirical evidence, literature reviews, meta-analytical results, and theoretical or pedagogical contributions.

d) Documentary Analysis Procedure

The 15 scientific publications were classified into five principal methodological categories according to their predominant content:

1. Artificial Intelligence and Personalized Language Learning (2 publications). Research examining the integration of artificial intelligence into language education, individual learning experiences, and the possibilities of adapting educational support to students' proficiency levels and learning needs.
2. Conversational Chatbots and Language Interaction (3 publications). Studies addressing AI-powered chatbots, conversational practice, speaking development, language interaction, and their contribution to second-language learning.
3. Automated Feedback and Language Skill Development (5 publications). Research focusing on automated writing feedback, grammatical correction, academic writing

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performance, pronunciation practice, and the development of language competencies through artificial intelligence technologies.

4. Learner Motivation and Autonomy (2 publications). Investigations examining the relationship between artificial intelligence, student motivation, learning confidence, social-emotional factors, and independent participation in language learning activities.
5. Teachers' Roles and Ethical Challenges (3 publications). Studies addressing the pedagogical integration of generative artificial intelligence, teachers' responsibilities, educational limitations, information accuracy, and the appropriate use of emerging technologies in language instruction.

The five methodological categories were integrated into three analytical axes for the presentation of findings.

The first axis, Artificial Intelligence and Personalized Learning, included two publications addressing individual learning experiences and technological support for language education.

The second axis, Conversational Interaction, Automated Feedback, and Language Skill Development, combined three publications on chatbots and language interaction with five studies addressing automated feedback and language competencies, totaling eight publications.

The third axis, Learner Motivation, Teacher Involvement, and Educational Challenges, brought together two publications concerning motivation and autonomy and three investigations related to teachers' roles and ethical considerations, comprising five publications.

Thus, the analytical axes included 2, 8, and 5 publications, respectively, for a total of 15 studies without duplication.

To extract and compare the information, the research topic, educational context, methodological approach, reported contribution, and interpretative limitations of each publication were identified. The comparative analysis sought conceptual and methodological similarities and differences rather than calculating a combined effect size or conducting an independent meta-analysis.

Evidence related directly to language learning outcomes was distinguished from studies focusing on learners' perceptions, technological acceptance, motivation, or

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pedagogical recommendations. This distinction helped prevent the interpretation of positive attitudes toward artificial intelligence as direct evidence of improved language proficiency. The resulting interpretative synthesis organized the contributions into the three analytical axes described above and provided the foundation for discussing the educational potential, limitations, and pedagogical implications of artificial intelligence as a co-pilot in personalized language learning.

3. RESULTS

The five methodological categories were integrated into three comparative axes: (1) artificial intelligence and personalized language learning (2 publications); (2) conversational interaction, automated feedback, and language skill development (8 publications); and (3) learner motivation, teacher involvement, and educational challenges (5 publications). Empirical findings, systematic reviews, meta-analyses, and pedagogical contributions were distinguished according to their methodological scope. Table 2 summarizes the 15 scientific publications and identifies the principal contributions and limitations relevant to interpreting the educational potential of artificial intelligence. Table 3 relates the three analytical axes to pedagogical applications without attributing experimentally verified effectiveness to the present narrative review.

Table 2

Specific Findings and Contributions Relevant to the Interpretation of Artificial Intelligence in Personalized Language Learning

Study and approach	Reported finding or contribution	Limitation of interpretation
Boudouaia et al. (2024) – experimental study	Reported improvements in EFL writing performance and favorable attitudes toward ChatGPT-4 among university students.	Findings correspond to a particular sample and educational context; they do not establish effectiveness for all language learners.
Cislowska and Pena-Acuna (2024) – systematic review	Examined the integration of conversational chatbots into additional language education and their potential pedagogical applications.	Differences between the reviewed educational contexts limit direct generalization.

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Du and Daniel (2024) – systematic review	Identified opportunities for English-speaking practice, conversational interaction, pronunciation development, and learner engagement.	Does not demonstrate identical effects across proficiency levels or educational settings.
Fleckenstein et al. (2023) – meta-analysis	Examined the effects of automated feedback on students' writing performance.	Automated writing feedback is not equivalent to comprehensive AI-supported language learning.
Inceoglu et al. (2024) – empirical study	Examined learners' interaction with automatic speech recognition and the influence of pronunciation attitudes on repeated practice.	Learner behavior during pronunciation practice cannot be interpreted as a direct measurement of overall language proficiency.
Karataş et al. (2024) – empirical investigation	Explored the educational applications of ChatGPT and foreign language learners' experiences with AI-assisted learning.	Learner perceptions should be distinguished from objectively measured language achievement.
Lee et al. (2026) – systematic review	Examined the integration of generative AI into language classrooms and its pedagogical implications.	Findings derived from different teaching contexts do not establish a universally effective instructional model.
Lo et al. (2024) – systematic review	Analyzed applications of ChatGPT in ESL/EFL education, including educational opportunities and implementation challenges.	Evidence from heterogeneous studies does not demonstrate a uniform effect on language learning outcomes.
Lyu et al. (2025) – meta-analysis	Synthesized comparative research on chatbot-assisted language learning and its effectiveness in supporting language development.	Combined findings depend on the characteristics and methodological quality of the included studies.
Mahapatra (2024) – mixed-methods intervention	Investigated ChatGPT-supported feedback and its relationship with ESL students' academic writing development.	Results primarily concern academic writing and cannot be generalized to every language skill.
Meniado et al. (2024) – learner experience study	Examined EFL learners' experiences and perceptions of using ChatGPT for second-language writing.	Perceived usefulness does not necessarily demonstrate measurable improvements in proficiency.
Polakova and Ivenz (2024) – educational investigation	Examined the contribution of ChatGPT-generated feedback to EFL students' writing development.	Findings concern writing instruction and depend on the conditions of feedback implementation.

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Song and Song (2023) – empirical investigation	Examined the relationship between ChatGPT-assisted instruction, academic writing performance, and learner motivation.	The findings do not establish that motivational or performance improvements occur in every educational context.
Wu (2024) – meta-analysis	Examined AI-supported second-language learning outcomes and contextual, instructional, and social-emotional factors.	Variation among interventions and learner populations limits universal interpretation.
Xiao et al. (2026) – scoping review	Examined the research landscape of generative AI-supported writing instruction in EFL education.	Mapping existing research does not establish the causal effectiveness of a specific educational intervention.

Note. The contributions were summarized according to the research focus and reported findings of the cited publications. The classification distinguishes experimental evidence, learner perceptions, systematic reviews, meta-analyses, and pedagogical analysis. It does not represent a formal methodological audit of all original full texts. The publications are not treated as equivalent measurements of AI effectiveness.

Artificial Intelligence and Personalized Language Learning

Artificial intelligence has introduced new possibilities for adapting language learning activities to students' individual needs, proficiency levels, and educational preferences. Karataş et al. (2024) examined the integration of ChatGPT into foreign language education and explored learners' experiences with AI-supported activities. Their investigation contributes to understanding how conversational technologies may provide additional opportunities for individualized explanations, grammar practice, and vocabulary development. Similarly, Meniado et al. (2024) analyzed the experiences and perceptions of EFL learners in Thailand and Vietnam regarding the use of ChatGPT for second-language writing. Their work highlights the relevance of AI-supported writing assistance and its perceived usefulness in language learning activities.

The contributions of these studies converge in recognizing the potential of artificial intelligence to provide flexible learning support. However, their methodological approaches and educational contexts differ. Research based on students' experiences and perceptions cannot establish by itself that a technological system automatically adapts instruction to individual learning needs or produces measurable improvements in language proficiency. Consequently, personalized learning should be understood as a pedagogical

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possibility requiring appropriate instructional design, continuous evaluation, and teacher supervision.

From this perspective, artificial intelligence can function as an educational co-pilot by supporting students in requesting explanations, reviewing linguistic structures, generating practice activities, and identifying areas requiring additional attention. Nevertheless, these applications should not be interpreted as evidence that AI replaces personalized teaching or independently guarantees effective language acquisition.

Conversational Interaction, Automated Feedback, and Language Skill Development

The second analytical axis included eight publications addressing conversational chatbots, language interaction, automated feedback, pronunciation development, and writing performance. Cislowska and Pena-Acuna (2024) reviewed the integration of chatbots into additional language education, while Du and Daniel (2024) examined their application in English-speaking practice. Lyu et al. (2025) extended this discussion through a meta-analysis of comparative studies on chatbot-assisted language learning. These contributions identify conversational technologies as relevant resources for providing additional interaction opportunities and supporting the development of language skills, although the reported outcomes depend on the characteristics of the learning environments and the studies examined.

Regarding writing development, Fleckenstein et al. (2023) investigated the effects of automated feedback on students' writing performance, providing a broader perspective on technology-supported correction processes. Mahapatra (2024) examined the contribution of ChatGPT to ESL students' academic writing through an intervention study. Polakova and Ivenz (2024) analyzed the effects of ChatGPT-generated feedback on EFL writing development, while Boudouaia et al. (2024) investigated ChatGPT-4 as a resource for improving English writing skills among university students. These publications collectively support the educational relevance of timely feedback and guided revision, but they differ in the technologies used, research designs, and populations studied.

Pronunciation development represents another dimension of AI-assisted language education. Inceoglu et al. (2024) investigated learner behavior during autonomous practice with automatic speech recognition technology. Their findings showed that learners' pronunciation attitudes were related to their willingness to repeat words that the recognition

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system did not transcribe successfully. The study contributes to understanding learner engagement with pronunciation technology, although it does not establish that repeated attempts necessarily produce equivalent improvements in overall speaking proficiency.

The convergence among these eight publications lies in the potential contribution of artificial intelligence to language practice, feedback, and communication development. Nevertheless, conversational practice, automated writing correction, and pronunciation recognition represent different technological applications and educational processes. Their findings cannot be combined into a single effectiveness estimate without a formal meta-analytical procedure. The reviewed evidence suggests that AI-assisted activities may complement language instruction when feedback is accurate, tasks are pedagogically meaningful, and students receive appropriate guidance.

Learner Motivation, Teacher Involvement, and Educational Challenges

The third analytical axis comprised five publications addressing learner motivation, social-emotional factors, pedagogical integration, and the limitations of artificial intelligence in language education. Song and Song (2023) examined the effects of ChatGPT-assisted learning on academic writing performance and motivation among EFL students. Their findings contributed to the discussion on how interactive technologies may influence students' participation and attitudes toward language learning. Wu (2024), through a meta-analysis of artificial intelligence interventions in second-language learning, examined learning outcomes and the influence of contextual, instructional, and social-emotional factors. Both publications highlight the relevance of considering learner motivation alongside linguistic performance, although these dimensions should not be interpreted as equivalent indicators of educational effectiveness.

Regarding the pedagogical role of teachers, Lo et al. (2024) reviewed empirical research on ChatGPT in ESL/EFL education and identified opportunities and challenges associated with its classroom application. Lee et al. (2026) examined the integration of generative AI into language classrooms, contributing to the discussion of instructional practices and the relationship between technological innovation and language teaching. These studies support the relevance of pedagogical supervision and suggest that the educational value of artificial intelligence depends on how teachers incorporate it into learning activities.

Doi: https://doi.org/10.63688/wfawq873

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Xiao et al. (2026) examined the development of research on generative AI-supported writing instruction in EFL education. This contribution broadens the discussion of AI integration by considering the educational implications of emerging technologies in writing instruction. However, a scoping review maps research developments and does not independently demonstrate the effectiveness of particular classroom strategies.

The five publications converge in recognizing that the integration of artificial intelligence involves more than technological availability. Learners' motivation, the quality of instructional guidance, educational objectives, and responsible technological use influence how AI resources are incorporated into language learning environments. Although AI may create opportunities for flexible and interactive learning, its implementation also requires attention to information accuracy, academic integrity, privacy, and the continuing responsibilities of language teachers.

Table 3

Summary of Findings and Pedagogical Applications by Thematic Axis

Thematic axis	Synthesis of contributions	Application to personalized language learning
Artificial intelligence and personalized language learning	AI-supported activities provide opportunities for individualized explanations, flexible practice, and assistance with language learning tasks.	Design differentiated grammar, vocabulary, and writing exercises according to students' needs, drawing on Karataş et al. (2024) and Meniado et al. (2024). Proposed pedagogical application; not an intervention evaluated in the present review.
Conversational interaction, automated feedback, and language skill development	Chatbots, automated feedback, and speech recognition technologies offer different forms of language practice and support for developing specific competencies.	Incorporate guided conversations, pronunciation exercises, writing revision, and feedback activities, drawing on Cislowska and Pena-Acuna (2024), Du and Daniel (2024), Lyu et al. (2025), Fleckenstein et al. (2023), Mahapatra (2024), Polakova and Ivenz (2024), Boudouaia et al. (2024), and Inceoglu et al. (2024).
Learner motivation, teacher involvement, and educational challenges	Motivation, pedagogical guidance, technological limitations, and responsible AI integration represent important	Promote learner autonomy, establish guidelines for responsible AI use, evaluate generated feedback, and maintain teacher supervision based on Song and Song (2023), Wu (2024), Lo et al. (2024), Lee et al. (2026), and Xiao et al. (2026).

Doi: https://doi.org/10.63688/wfawq873

	dimensions of language education.

Note. The pedagogical applications are interpretative recommendations derived from the narrative review. They do not represent classroom interventions implemented or evaluated by the authors of the present article. The proposed applications should be adapted to learners' proficiency levels, institutional resources, and educational contexts.

4. DISCUSSION

The comparison of the 15 scientific publications revealed three interconnected dimensions that should not be considered equivalent: the personalization of language learning through artificial intelligence, the development of linguistic competencies through conversational interaction and automated feedback, and the pedagogical conditions required for responsible technological integration. Although these dimensions contribute to understanding the educational potential of AI, improvements in specific language skills do not necessarily demonstrate the effectiveness of a comprehensive personalized learning model. The main contribution of this narrative review was to organize these perspectives and identify their educational implications and limitations.

Karataş et al. (2024) and Meniado et al. (2024) examined the integration of ChatGPT into foreign language education from different perspectives. Both investigations addressed opportunities associated with AI-supported language activities, but their educational contexts and research objectives differed. While Karataş et al. (2024) explored the experiences of foreign language learners using ChatGPT, Meniado et al. (2024) focused on learners' perceptions and experiences of second-language writing. These contributions suggest that AI can facilitate individualized assistance, although favorable perceptions cannot independently establish measurable improvements in language proficiency or confirm the effectiveness of adaptive learning systems.

The literature concerning conversational chatbots (Cislowska & Pena-Acuna, 2024; Du & Daniel, 2024; Lyu et al., 2025) identified opportunities for language interaction, speaking practice, and the development of communicative competencies. However, these publications presented different methodological approaches and examined educational interventions with varying characteristics. The findings of Lyu et al. (2025) contributed comparative evidence concerning chatbot effectiveness, while Du and Daniel (2024) focused on English-

ISSN: 3091-1915
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speaking practice. Consequently, the results support the potential usefulness of conversational technologies but do not justify assuming identical educational benefits across languages, proficiency levels, or institutional settings.

Fleckenstein et al. (2023), Mahapatra (2024), Polakova and Ivenz (2024), and Boudouaia et al. (2024) examined automated feedback and writing development through different technological applications and research designs. Their contributions indicate that automated correction and feedback can support writing activities and revision processes. Nevertheless, the effects of automated feedback should not be interpreted as equivalent to the effectiveness of generative AI in every language learning context. The quality of feedback, the educational objectives, and the degree of teacher involvement remain important considerations when interpreting these findings.

Inceoglu et al. (2024) provided a complementary perspective by examining learner behavior during autonomous pronunciation practice supported by automatic speech recognition. Unlike studies focusing on writing performance, this investigation addressed the relationship between pronunciation attitudes and learner interaction with technological feedback. Its contribution highlights the importance of understanding how students respond to AI-supported practice. However, repeated pronunciation attempts or favorable attitudes toward the technology do not independently demonstrate improvements in overall communicative competence.

The investigations conducted by Song and Song (2023) and Wu (2024) expanded the analysis by examining motivation and social-emotional dimensions of AI-assisted language learning. Both publications contributed to understanding the relationship between technological support, student participation, and language learning outcomes. Nevertheless, motivation and academic achievement represent different educational indicators. Positive changes in learner engagement should therefore not be interpreted as sufficient evidence that artificial intelligence produces sustained improvements in language acquisition.

The systematic reviews conducted by Lo et al. (2024) and Lee et al. (2026) contributed to examining the integration of artificial intelligence into language classrooms and the pedagogical challenges associated with its implementation. These studies reinforce the importance of teacher involvement in selecting resources, designing activities, evaluating AI-generated explanations, and establishing responsible learning practices. Their

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contributions suggest that artificial intelligence should function as a complementary instructional resource rather than as an independent replacement for human teaching. However, the pedagogical recommendations identified in these reviews require contextual adaptation before implementation in different educational environments.

Xiao et al. (2026) contributed an additional perspective through a scoping review of generative AI-supported writing instruction in EFL education. This research broadened the understanding of emerging educational applications and highlighted the importance of examining how generative technologies are incorporated into writing instruction. Nevertheless, mapping scientific publications does not establish the effectiveness of a particular teaching strategy. Its contribution should therefore be distinguished from experimental investigations measuring specific learning outcomes.

The international diversity of the reviewed studies also requires consideration. Most of the publications in the documentary corpus examined English as a Foreign Language (EFL) or English as a Second Language (ESL), while a smaller number addressed additional-language education or second-language learning more broadly. Therefore, the findings are most directly supported in relation to the English-learning contexts and populations investigated in the source studies. Their application to other languages should be regarded as a possibility for further investigation, not as an established result. Differences in learners' proficiency levels, access to technological resources, instructional practices, and institutional conditions also prevent the automatic transfer of findings to every educational setting. Any implementation should consider local educational requirements and the characteristics of the target population.

As a pedagogical inference, it is reasonable to propose the integration of AI-supported conversational activities, individualized writing exercises, pronunciation practice, and formative feedback under teacher supervision. These recommendations emerge from the comparison of the reviewed publications and should not be interpreted as interventions implemented or experimentally validated in the present research. Their educational relevance depends on the accuracy of technological responses, the alignment of activities with learning objectives, and the ability of students to critically evaluate generated information.

The critical comparison also revealed an asymmetry in the available evidence. Some empirical studies examined specific language skills, such as writing and

Doi: https://doi.org/10.63688/wfawq873

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pronunciation, while systematic reviews and meta-analyses synthesized findings from broader educational contexts. Other investigations focused on learner perceptions, motivation, or pedagogical implications. These differences prevented the establishment of a single measure of effectiveness for artificial intelligence as a co-pilot in personalized language learning. Furthermore, improvements in writing, speaking practice, or motivation cannot independently demonstrate the effectiveness or inclusiveness of an integrated AI-supported learning model.

The present review had several limitations. The documentary corpus was intentionally composed of 15 scientific publications dated between 2023 and 2026, without an exhaustive search protocol, a reproducible record of database searches, or a formal methodological quality assessment. The studies also differed in their research designs, educational populations, technological applications, and indicators of learning outcomes. In addition, the concentration of publications on English language education limited the possibility of generalizing the findings to other languages. Although the corpus included recent publications, its intentional selection did not guarantee comprehensive coverage of the scientific literature.

Future research should document reproducible bibliographic search procedures and conduct comparative educational investigations involving different languages, proficiency levels, and institutional contexts. Longitudinal and experimental studies would be particularly valuable for examining the sustained effects of AI-supported learning on language proficiency, motivation, autonomy, and educational inclusion. It is also necessary to investigate how teacher guidance, access to technology, and the quality of automated feedback influence learning outcomes. Such evidence would allow researchers to distinguish the potential benefits of artificial intelligence from its empirically demonstrated educational effects.

5. CONCLUSIONS

The narrative review of 15 scientific publications published between 2023 and 2026 identified artificial intelligence as a potentially useful complementary resource for language learning, particularly in the English as a Foreign Language (EFL) and English as a Second Language (ESL) contexts represented in most of the reviewed studies. The literature reported opportunities for individualized learning assistance, conversational practice, automated

Doi: https://doi.org/10.63688/wfawq873

ISSN: 3091-1915
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feedback, and support for specific linguistic competencies. These findings should be interpreted within the populations, educational settings, language-learning contexts, and technological conditions examined by the original publications. Because the documentary corpus was selected thematically and was not based on an exhaustive search protocol, it does not support universal claims about the effectiveness of AI in language education or the automatic transfer of results to other languages.

The reviewed publications provide context-specific evidence about several distinct applications. Conversational chatbots were examined as tools for interaction and speaking practice; automatic speech recognition was considered in relation to pronunciation practice; and automated writing feedback was investigated as support for drafting, correction, and revision. These applications are not interchangeable, and the findings for one should not be treated as proof of the effectiveness of another. In particular, improvements in a specific writing or pronunciation task do not establish equivalent improvements in speaking, overall proficiency, or language acquisition across all learners and settings.

Three dimensions must remain conceptually distinct. Individualized assistance refers to support or explanations provided in response to a learner's immediate needs. Automated feedback refers to system-generated comments, corrections, or suggestions on a particular performance or task. Adaptive learning systems, in contrast, involve the systematic adjustment of learning pathways, content, or difficulty in response to learner data and progress. Evidence that a tool provides individualized assistance or automated feedback does not, by itself, demonstrate that it constitutes an effective adaptive system. Across these applications, teacher guidance remains important for evaluating the accuracy, relevance, and pedagogical value of AI-generated support.

In response to the research question, the reviewed literature suggests that AI may support more personalized language-learning activities by facilitating individualized practice, conversational interaction, and task-specific feedback. However, the strength and nature of this support depend on the particular technology and educational context. The evidence reviewed does not establish that these tools consistently improve learning outcomes, guarantee learner autonomy, or produce educational inclusion. Such outcomes remain conditional on equitable access to technology, appropriate instructional design, teacher supervision, and the needs and characteristics of learners. In addition, because most

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of the reviewed publications focused on English-language learning, the implications for other languages should be treated as tentative and require direct empirical investigation.

The integration of artificial intelligence into language education should therefore prioritize teacher supervision, the critical evaluation of AI-generated information, ethical technological use, and the adaptation of learning activities to educational objectives. Future investigations should employ documented search procedures and empirical research designs to evaluate long-term learning outcomes, accessibility, student autonomy, and the effectiveness of AI-supported language instruction across different educational contexts.

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ISSN: 3091-1915

Vol. 4 Núm. 1 (2026)

CONFLICT OF INTEREST

No existe.

FUNDING

No aplica.

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Redacción – revisión y edición: Diego Alejandro Fernández Cando, Dennys Eduardo Montaño Ormaza, Byron Patricio Castro Mosquera, Yesenia Vanesa Idrobo Bermeo, Mary Johanna Panchi Chasiloa.

Doi: https://doi.org/10.63688/wfawq873