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AI-Powered Pedagogical Strategies for Developing Speaking Skills in EFL Contexts: A Systematic Literature Review (2018-2025)

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Abstract: Artificial intelligence (AI) is increasingly used in foreign language education to expand oral practice, personalise feedback, and support learner autonomy. For EFL learners, speaking is among the most difficult skills to acquire, as it involves real-time integration of factors such as fluency, pronunciation, grammatical accuracy, interactional competence and confidence. This paper presents a systematic literature review of AI-based pedagogical strategies used to improve speaking skills in EFL/ESL contexts from 2018-2025. We used a PRISMA-informed review with the PICOC framework. The final extraction matrix included no more than one copy of each reference (i.e., one per author). The final database contained more than 400 entries. It included new studies in addition to replacement studies from previously discovered/deleted studies obtained from reliable academic sources, including System, Computers & Education, Computers and Education: Artificial Intelligence, Innovation in Language Learning and

Teaching, *Frontiers in Psychology*, *Computer Assisted Language Learning*, *Computers in Human Behavior*, and *British Journal of Educational Technology* (the full listing of these publications can be found by accessing the corresponding reference number included with each project listed at the end of this report). Based on the inclusion/exclusion criteria, 29 results were synthesised. The most frequent technologies in the synthesis included conversational chatbots; generative AI; automated speech recognition (ASR) systems; AI-based speech evaluation tools; and adaptive/informal AI-mediated tools for classroom learning. The most commonly reported outcome variables were fluency, pronunciation accuracy, motivation, learner autonomy, willingness to communicate, confidence, and decreased anxiety. AI-powered speaking strategies can enhance oral language development through pedagogically designed instructional activities and teacher mediation. However, available evidence is limited by short-duration intervention periods, a concentration of research from Africa, and a lack of longitudinal research in this area. Future research should explore speeches that enhance AI-mixed learning in higher education settings in Latin America, as well as develop responsible ethical implementation frameworks that account for cultural context differences.

Keywords: artificial intelligence, EFL, speaking skills, chatbots, automatic speech recognition, generative AI, systematic literature review.

Introduction

Research Problem

The accelerated development of artificial intelligence (AI) has reshaped educational systems and created new possibilities for teaching, learning, and assessment. In language education, AI has moved from peripheral experimentation to mainstream pedagogical debate because it can generate natural language, process speech, personalise feedback, and support learners beyond the physical classroom. These affordances are important for EFL and ESL students. They need many opportunities to interact and receive specific feedback, as well as be motivated to repeatedly work on improving their speaking ability. An EFL learner must combine several different aspects of their speaking ability when they are speaking: pronunciation of words, retrieving vocabulary, using grammar correctly, speaking fluently, being aware of pragmatics, and being able to interact well in the moment with someone else. For many EFL students, anxiety, fear of what others think (e.g., **negative** evaluations), limited exposure to real-life and authentic speaking opportunities, and little chance for individualised speaking practice are key factors shaping their ability to speak English. Larger classes and limited teacher time can magnify these difficulties, as it is difficult to provide individual students with sustained oral feedback in a classroom. Using AI-based tools such as conversational chatbots that simulate interactive dialogue, generative AI that creates scenarios (context/situation) and models how to respond correctly to a spoken English question, ASR (Automatic Speech Recognition) tools that provide pronunciation feedback, and adaptive platforms that tailor learning paths for each student, can help to mitigate these issues. Overall, by providing more opportunities for students to practice speaking, receive immediate feedback, and practice speaking in lower-stress settings, these emerging technologies have the potential to increase the speaking proficiency of students learning English as a foreign language. Nevertheless, the pedagogical value of AI depends on how it is designed, implemented, monitored, and aligned with learning objectives.

Research Focus

The literature on AI-enhanced speaking pedagogy has expanded rapidly since 2022, particularly after the emergence of generative AI tools and increasingly sophisticated speech technologies. However, this evidence remains dispersed across diverse contexts, tools, research designs, and learner populations. Some

studies focus on pronunciation, while others examine willingness to communicate, anxiety, fluency, and how learners perceive themselves. English language education has an abundance of high-impact, peer-reviewed evidence as well as less stable evidence—such as preprints, institutional repositories, or duplicated reports—which necessitates systematic synthesis. Thus, this systematic literature review investigates how AI-powered pedagogical strategies have been used to improve students' speaking abilities through EFL or ESL contexts between 2018 and 2025. The review focuses on the types of AI tools used, the outcomes reported, the pedagogical implications of those tools, and the remaining research gaps. By excluding duplicate and incomplete records and incorporating stronger replacement studies from indexed journals, the manuscript provides a refined synthesis intended to support future journal submission.

Research Aim and Research Questions

This review aims to systematically identify, evaluate, and synthesise available evidence on AI-powered pedagogical strategies for developing speaking skills in EFL/ESL contexts between 2018 and 2025. This aim is addressed through the following research question:

What AI-powered pedagogical strategies have been implemented to improve the teaching and learning of speaking skills in foreign language education, and what outcomes have been reported regarding oral proficiency, learner autonomy, and learner motivation?

Objectives

- Identify the main AI-powered strategies used for speaking instruction in EFL/ESL contexts.
- Analyse the reported effects of AI tools on fluency, pronunciation, motivation, autonomy, confidence, and anxiety.
- Examine the methodological and contextual characteristics of the included studies.
- Identify research gaps and implications for future studies in higher education and Latin American EFL contexts.

Literature Review and Theoretical Background

Artificial Intelligence in Education (AIED) refers to the design and use of computational systems that support teaching and learning through data analysis, adaptive feedback, natural language processing, and automated decision support. Unlike earlier educational technologies that functioned mainly as repositories or practice environments, AI systems can respond to learners, interpret input, generate feedback, and adapt instructional pathways. In language acquisition, these capacities are usually connected to the need to interact, receive feedback and have personalised experiences. We can describe AI-supported language acquisition as today's advanced version of Computer-Assisted Language Learning (CALL). CALL primarily focused on providing learners with exposure, practice and multimedia resources for language acquisition.

In contrast, AI-enhanced CALL adds interaction, adaptability and automaticity to the learning experience. This change in CALL has occurred through the development of pronunciation training systems (e.g., Speech Recognition), intelligent tutoring systems, conversational chatbots, automated scoring systems and generative language models – each contributing to learners' development of speaking skills in different ways (i.e., some focus on accuracy and pronunciation; others on fluency, dialogue and communication confidence). Conversational chatbots are one of the most prominent forms of AI-enhanced CALL. They can provide learners with a continuous conversational partner, opportunities for repetitive practice and the ability to alleviate some of the anxiety that can occur when participating in conversations with other people. Task-oriented chatbots are particularly relevant because they can be aligned with communicative objectives such as asking for information, negotiating meaning, solving problems, or

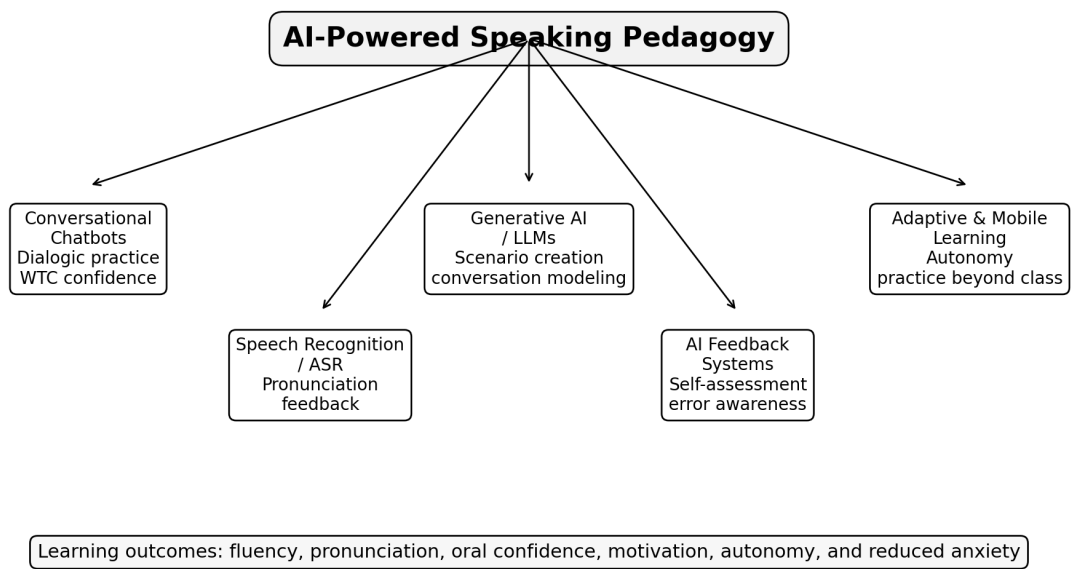
rehearsing interviews. Recent generative AI chatbots extend these affordances by producing more flexible and context-sensitive responses.

Automatic speech recognition systems are another major strand of AI-powered speaking pedagogy. ASR tools analyse learner speech and provide feedback on segmental and suprasegmental aspects of pronunciation, including phoneme production, stress, rhythm, and intelligibility. Teachers find providing pronunciation feedback particularly challenging in large classes, and Automatic Speech Recognition (ASR) tools can be used for repeated practice, which is important for developing fluency and automaticity in speech skills. At an academic level, AI-augmented speaking instruction can be conceptualised theoretically using constructivism (constructivist), sociocultural theory (sociocult), computer-assisted language learning (CALL), and self-regulated learning (SRL). Constructivism describes students as active and engaged in constructing meaning. The sociocultural perspective reinforces the importance of interaction and scaffolding (supporting through assistance). CALL provides a framework for understanding how technology increases the opportunity for exposure to and practice of language. SRL describes how feedback, tracking and repetition can promote student autonomy through automation. Together, these views support a pedagogical approach that uses AI as a partner in education and as a complement, rather than a substitute, for teaching. While using AI in education has potential, it also presents several challenges. There is a risk that feedback provided may not be accurate and that students may misuse or misinterpret the information received through chatbots, and that dependence on automated support may negatively affect student performance. Ethical issues involving privacy, data use, transparency, bias, and unequal access are equally important. Therefore, responsible AI integration requires teacher mediation, clear learning objectives, digital literacy, and institutional guidance.

Conceptual Framework

This review's conceptual framework positions AI-powered speaking pedagogy at the intersection of interaction, feedback, personalisation, and learner agency. Conversational tools increase opportunities for output and negotiation of meaning. ASR and speech evaluation systems support pronunciation and intelligibility. Generative AI enables scenario-based practice and dialogic modelling. Adaptive and informal AI-mediated systems support self-regulated practice beyond the classroom.

Figure 1
Emerging thematic structure of AI-powered speaking pedagogy.



Methodology

This study employed a systematic literature review design to identify, evaluate, and synthesise studies on AI-powered strategies for developing speaking skills in EFL/ESL contexts. The review followed PRISMA 2020 and a PICOC framework that defined the study population, intervention, comparison, outcomes, and context.

The population included EFL/ESL learners and teachers involved in AI-supported speaking activities. AI-based teaching strategies were used in various educational settings (traditional, teacher-given, peer-to-peer, or with non AI-tech) and used a variety of technologies (AI speech recognition (ASR), AI speech instruction and evaluation, adaptive platforms, and mobile AI) to help learners achieve their goals of improving speaking fluency, accuracy of pronunciation, overall performance in oral presentations, motivation, autonomy, willingness to communicate, confidence, and reduced anxiety. In addition, the types of learners included in these studies included individuals in higher education; elementary, middle, and high school contexts; digital (informally via the Internet) learners and those who study online; and those using a combination of blended/online learning methods. The original extraction matrix included 30 records as the target evidence base. This included one summary row, four duplicate excerpts, and five records that were incomplete/missing information. Once the records were validated and edited (to maintain accuracy with respect to identifying) a total of 10 replacement records were identified from higher quality, stronger academic journal sources—mainly indexed journals, high four impact factor(2.5- 4 +) publishers (e.g. System, Computers & Education, Computers and Education: The Journal of Artificial Intelligence, Journal of Innovation in Language Learning and Teaching, Frontiers in Psychology, Computer Assisted Language Learning, Computers in Human Behavior, British Journal of Educational Technology) and other types of research. Included studies had to meet specific criteria, including: a) Date of publication between 2018 and 2025; b) Relevance to topics related to artificial intelligence (AI), discussion bots, automatic speech recognition (ASR), evaluation of spoken language (speech assessment) and generative AI. c) Relation to spoken or oral communications. d) The study must have published empirical studies or conducted systematic reviews or provided a strong theoretical basis for the analysis of each study. e) The study must provide sufficient bibliographic details and/or sufficient details about the measurement approach (if the study was conducted as a systematic review) to describe the sample/context used to conduct the study. The following exclusion criteria were applied: duplicate records; records pending extraction; unavailable sources; studies not related to speaking; sources with insufficient methodological detail; and records that could not be confidently categorised as having academic merit. Data were extracted from the studies into a structured synthesis table comprising the following items: author, publication year, country of research or research context, title of study, source of study, research design, sample or research context, the type of AI technology used in the research, overall outcomes from the study and quality assessment of the study. After completing the structured data extraction, we conducted a thematic synthesis of results using a narrative approach. Results were grouped by type of AI technology and outcomes achieved. Frequencies for year of publication, type of AI technology, research design and outcome awards were then calculated for all studies. Due to heterogeneity in design and measures across studies, it was not appropriate to conduct a meta-analysis.

Table 1

PICOC Framework

PICOC Element	Operational Definition
Population	EFL/ESL learners and teachers involved in AI-supported speaking activities.

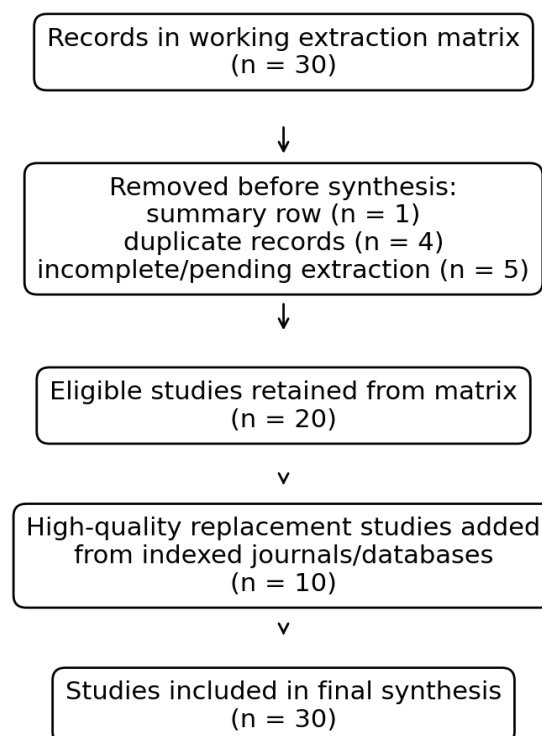
Intervention	AI-powered speaking strategies: chatbots, generative AI, ASR, AI speech evaluation, adaptive platforms, and mobile AI tools.
Comparison	Traditional speaking instruction, teacher-led interaction, peer interaction, or non-AI digital tools.
Outcomes	Fluency, pronunciation, oral proficiency, motivation, autonomy, confidence, willingness to communicate, anxiety, feedback.
Context	Higher education, school contexts, language centers, online/blended environments, and informal digital learning.

PRISMA-Informed Matrix Cleaning Procedure

The original search log with database hit counts was not available. Therefore, the PRISMA figure in this version documents the transparent cleaning and replacement process applied to the extraction matrix. For a formal journal submission, update the identification stage with exact database counts from Scopus, Web of Science, ERIC, ScienceDirect, SpringerLink, and other databases used.

Figure 1

PRISMA-informed matrix cleaning and replacement flow



Results

The final synthesis included 29 studies published between 2021 and 2025, with the highest concentration in 2024. This temporal distribution confirms that research on AI-powered speaking pedagogy intensified after the broader diffusion of generative AI and more accessible speech technologies.

The reviewed studies included experimental and quasi-experimental designs, mixed-methods studies, qualitative case studies, systematic reviews, and conceptual syntheses.

In addition to generative AI and LLM tools, the most frequently utilised AI technologies included conversational chatbots, speech recognition systems, AI speech evaluation platforms, and adaptive or informal AI-mediated learning. Chatbots and conversational AI are the most common AI technologies because they directly provide speaking practice and interaction. ASR and speech evaluation systems were also very prevalent because they deliver automated feedback on pronunciation and performance, which is difficult to deliver at scale through teacher feedback alone. Of all the studies reviewed, the most frequently measured outcomes were improved speaking performance or fluency, pronunciation accuracy, learner confidence, motivation to communicate, willingness to communicate, autonomy, and decreased speaking anxiety. The greatest supporting evidence related to outcomes such as fluency, pronunciation, and affective (emotional) outcomes, such as increased confidence and reduced speaking anxiety. This supports the idea that AI is particularly effective in cases where it provides additional opportunities for practice and delivers immediate feedback. The studies also indicated that AI tools were especially effective when they were embedded in pedagogically structured activities. Studies that combined task-based interaction with explicit pronunciation instruction, guided reflection, or guided implementation of teacher-supported video materials provided clearer evidence of learning gains than studies that treated AI as separate from the classroom experience. This finding gives credence to the belief that AI should be integrated into the instructional design of a learning activity and not just considered a new technology that can be used in place of existing technologies.

The cleaned matrix also shows clear methodological limitations in the field. Many studies rely on short interventions, small samples, self-report measures, or context-specific implementations. Longitudinal evidence remains limited. Moreover, Latin American contexts remain underrepresented, which is a relevant gap for EFL research in Ecuador and the wider region.

Figure 3

Distribution of included studies by year.

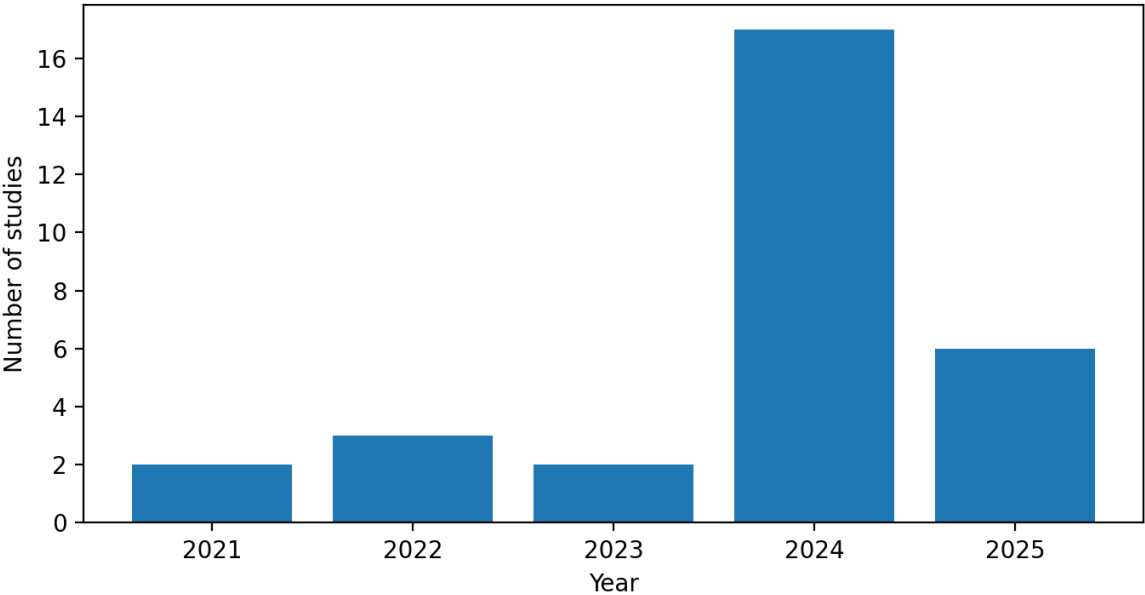


Figure 4

AI technologies most frequently identified.

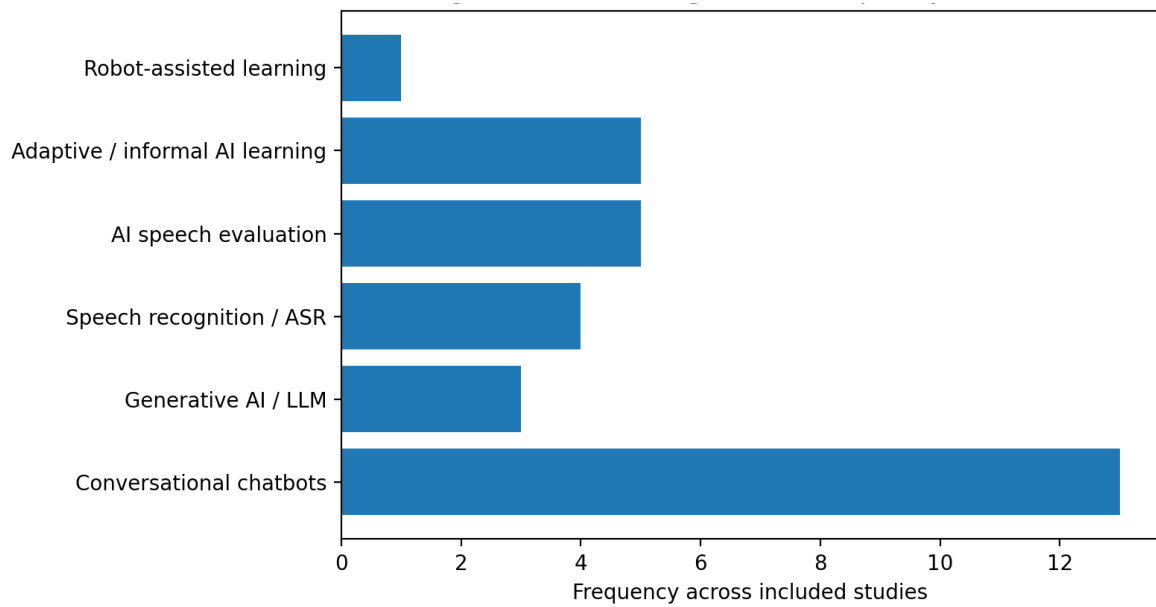


Figure 5

Main outcomes reported across the review.

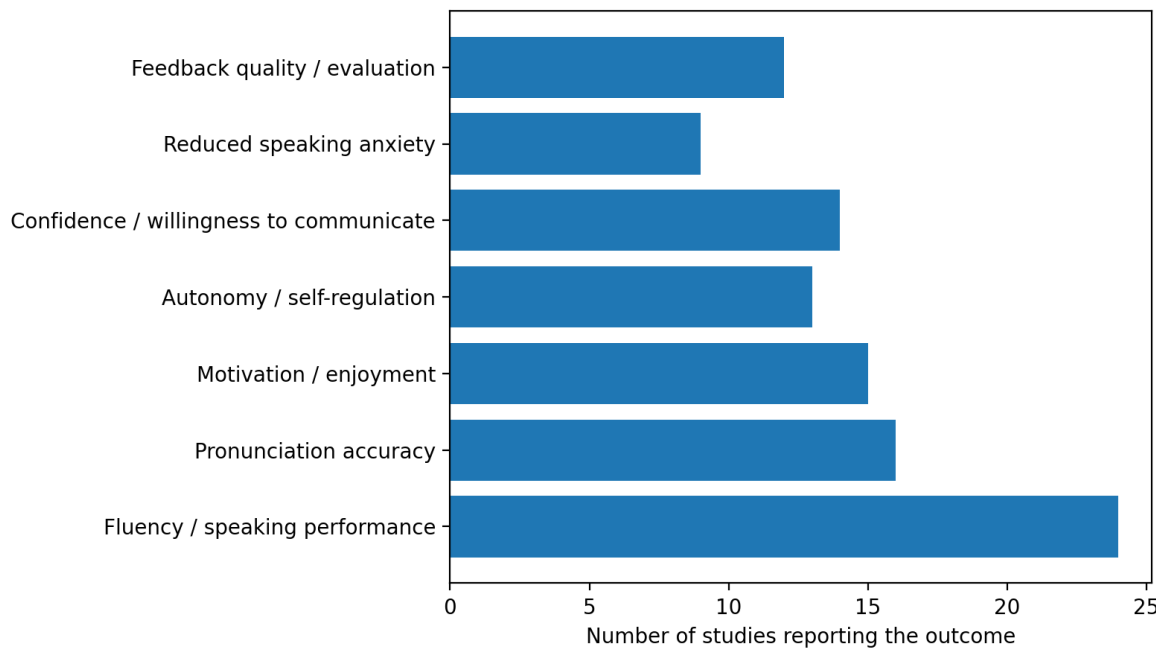


Table 2

General Characteristics of Included Studies

Category	Findings
Review period	2018-2025, with final included studies concentrated between 2021 and 2025
Studies included	29

Predominant contexts	Higher education, school EFL contexts, and informal digital learning
Most represented regions	Asia and the Middle East
Underrepresented regions	Latin America and Africa
Most common technologies	Chatbots, generative AI, ASR, AI speech evaluation, adaptive/mobile AI tools
Most common outcomes	Fluency, pronunciation, motivation, autonomy, confidence, willingness to communicate, anxiety reduction

Table 3

Master Synthesis of Included Studies

No .	Author(s)	Year	Source	Design	Technology	Main outcomes	Quality
1	Üstünbaş	2024	International Journal of Modern Education Studies / ERIC	Qualitative case study	LLM / ChatGPT	Usefulness for speaking practice; interruptions due to AI misinterpretation; digital literacy identified as a condition for effective use.	Moderate
2	Shikun et al.	2024	Arab World English Journal	Systematic review	Voice chatbots; pronunciation apps	Positive potential for oral language practice; methodological heterogeneity limits generalization.	Moderate
3	Qassrawi et al.	2024	Forum for Linguistic Studies	Case study / mixed evidence	AI pronunciation applications	Short-term gains in segmental pronunciation accuracy; stronger results when AI feedback is combined with explicit instruction.	Moderate
4	Sariyildiz	2024	ISRES	Systematic review	Chatbots	Chatbots support repeated oral practice and conversational rehearsal; review notes small samples and diverse measures.	Acceptable

5	Pituxcoosuv rn	202 5	Information	Quasi- experiment al study	AI speaking/pronunci at ion application	AI-assisted tasks improved speaking performance and supported lower-pressure oral practice.	High
6	Du & Daniel	202 4	Computers and Education: Artificial Intelligence	Systematic literature review	AI-powered chatbots	AI chatbot research for speaking is emerging; chatbots can accelerate practice and support course learning outcomes.	High
7	Yang et al.	202 2	ReCALL / ERIC	Quasi- experiment al study	AI chatbot	AI chatbot interaction supported English conversation practice and was perceived as useful as a speaking partner.	High
8	Liu	202 5	SpringerOpen	Review	AI applications learning	AI tools provide opportunities for personalization, feedback, and learner support, but require ethical and pedagogical guidance.	Moderate
9	Baskara	202 3	International Journal of Recent Educational Research	Systematic review	Chatbots	Chatbot- supported flipped learning can extend interaction time and prepare learners for communicative classroom tasks.	Acceptab le
10	Jeon	202 2	Computer Assisted Language Learning / indexed repositories	Thematic empirical analysis	AI chatbot	Learners perceived AI chatbots as available, non- threatening interaction partners that could increase oral participation.	High
11	Koç	202 4	Open METU	Systematic review	Chatbots	Chatbots show positive effects for language	Moderate

						practice; review recommends stronger designs and standardized outcome measures.	
12	Tai & Chen	2024	Computers & Education	Experimental study	Generative AI chatbot (CoolE Bot)	GAI chatbot interaction significantly improved speaking skills; individual and paired interaction configurations shaped learning outcomes.	High
13	Zhang, Meng, & Ma	2024	System	Empirical quantitative study	AI speaking tools	AI use in speaking was associated with enjoyment, reduced anxiety, and willingness to communicate.	High
14	Fathi, Rahimi, & Derakhshan	2024	System	Empirical intervention study	AI-mediated interactions	AI-mediated interaction improved speaking skills and willingness to communicate.	High
15	Bashori, van Hout, Strik, & Cucchiaroni	2024	Innovation in Language Learning and Teaching	Empirical intervention study	Automatic speech recognition	ASR-based pronunciation learning supported measurable pronunciation gains and learner awareness.	High
16	Sun	2023	Frontiers in Psychology	Mixed-methods investigation	Automatic speech recognition	ASR technology improved pronunciation and speaking skills; learners valued immediate feedback.	High
17	Dennis	2024	IAFOR Journal of Education / ERIC	Empirical / applied study	AI-powered speech recognition technology	Speech recognition tools supported pronunciation and speaking skill improvement.	Moderate

18	Zou et al.	2024	System	Mixed-methods study	AI speech evaluation system (EAP Talk)	Learners perceived AI speech evaluation as useful for feedback and practice, while noting limitations in authenticity and accuracy.	High
19	Ebadi et al.	2025	Acta Psychologica	Activity theory study / empirical intervention	AI-powered mobile speaking tasks	AI-powered speaking tasks improved performance and reduced speaking anxiety in structured learning activities.	High
20	Mingyan et al.	2025	Humanities and Social Sciences Communications	Quasi-experimental study	AI-powered mobile application	Experimental learners outperformed controls in speaking performance after AI-supported practice.	High
21	Alsalem	2024	Arab World English Journal	Survey / empirical study	ChatGPT	Students reported positive attitudes toward ChatGPT for speaking skill development, confidence, and practice opportunities.	Moderate
22	Mudawy	2025	Forum for Linguistic Studies	Case study	AI-powered conversational tools	Learners perceived conversational AI as useful for fluency development and low-pressure practice.	Moderate
23	Lee	2025	ERIC-indexed journal	Comparative empirical study	Conversational AI tools	Conversational AI supported engagement and oral practice; human interaction remained important for authenticity.	Moderate

24	Crompton et al.	2024	British Journal of Educational Technology	Review / conceptual synthesis	AI in ELT	AI affords personalization, feedback, and adaptive support but raises ethical, assessment, and teacher role challenges.	High
25	Engwall & Lopes	2022	Computer Assisted Language Learning	Empirical / review-informed study	Robot-assisted language learning	Robotic and AI-supported interaction can facilitate oral practice, collaboration, and engagement when pedagogically structured.	High
26	Xiao	2021	International Journal of Computer-Assisted Language Learning and Teaching	Empirical study	ASR-based pronunciation assessment	ASR diagnosed pronunciation problems and supported learner/teacher attitudes toward pronunciation assessment.	Moderate
27	Huang et al.	2021	Interactive Learning Environments	Design-based / empirical study	Task-oriented chatbot	Task-oriented chatbot design supported structured speaking practice and communicative rehearsal.	High
28	Liu, Darvin, & Ma	2024	Computer Assisted Language Learning	Mixed-methods study	AI-mediated informal learning tools	AI adoption supported agentic, autonomous language learning practices and highlighted the role of digital literacies.	High
29	Liu, Darvin, & Ma	2024	Computers in Human Behavior	Mixed-methods study	AI-mediated informal digital learning	Motivation and enjoyment mediated engagement in AI-supported language learning practices.	High

Table 3*Research Gaps Identified*

Research Gap	Implication
Longitudinal evidence	Most interventions are short-term; durability of gains remains uncertain.
Latin American evidence	Few studies examine AI-powered speaking pedagogy in Latin America or Ecuador.
Teacher professional development	Learner outcomes are emphasized more than teacher readiness, digital literacy, and pedagogical decision-making.
Ethical governance	Privacy, voice data, algorithmic bias, and transparency remain underexplored.
Comparative tool effectiveness	Few studies compare chatbots, ASR, LLMs, and AI speech evaluation systems directly.
Advanced communicative competence	Most studies focus on fluency and pronunciation rather than intercultural, pragmatic, or collaborative speaking competence.

Discussion

The findings demonstrate that AI-powered speaking pedagogy is not a single intervention but an ecosystem of tools and strategies. Conversational chatbots and generative AI support interaction and fluency; ASR supports pronunciation and intelligibility; AI speech evaluation supports feedback and self-assessment; and AI-mediated informal learning supports autonomy and motivation. The technologies used for speaking development encompass several complementary aspects. While Chatbot-based studies illustrate how speaking is inherently a communicative undertaking, they also provide learners with opportunities to engage in repeated and low-stress conversational exchanges. This enables EFL learners without access to authentic English-speaking environments to participate in conversational English. However, AI-based conversational partners do not fully replicate the characteristics and qualities of a human conversation partner. Human conversational partners have many characteristics that AI-based systems cannot replicate, such as pragmatic nuances, cultural meanings, emotional support, and unpredictability in negotiating meaning. Similarly, evidence suggests that ASR (automatic speech recognition) and AI-based speech evaluation are also valuable pedagogically. Because many teachers do not have sufficient time to provide individual feedback on students' pronunciation, AI tools can increase the frequency and degree of individualised practice time for students. However, teachers must continue to mediate student practice with automated tools because much of the automated feedback provided by these tools is biased against non-native speaker norms and therefore unreliable from a pedagogical standpoint.

Motivation, enjoyment, confidence, and reduced anxiety were at least four significant outcomes identified in the studies, indicating that AI technologies affect not only linguistic outcomes but the emotional aspects (affective conditions) that facilitate speaking a language. Learners with less perceived judgment and greater perceived control over their environment may engage in more speaking practice. AI feedback can facilitate learner monitoring and goal-setting in self-regulated language learning; however, students must have sufficient digital literacy skills to leverage it effectively. Additionally, the review identifies notable gaps in the literature. First, more longitudinal research is needed to determine whether AI-supported gains continue over time. Second, systematic comparative studies are needed to identify the effectiveness of different AI tools for specific speaking objectives. Third, teacher professional development remains underexplored. Fourth, ethical issues related to privacy, data ownership, algorithmic bias and

responsible use of AI require more attention. Finally, EFL (English as a foreign language) research in Latin America remains limited, presenting an opportunity for future research in higher education in Ecuador. In terms of supporting evidence for practice, the results support a balanced approach to integrating AI in academic environments. AI will complement learners' speaking practice and feedback. At the same time, teachers will retain primary responsibility for task structure and design, ethical instruction, social interaction, and interpreting AI feedback. In this model, AI becomes a pedagogical amplifier rather than a substitute for teaching.

Implications for EFL Pedagogy

- Use AI tools to extend speaking practice beyond the classroom, not to replace teacher-guided interaction.
- Combine ASR feedback with explicit pronunciation instruction and reflective tasks.
- Use chatbots for communicative rehearsal, role-play, and confidence building.
- Teach learners how to interpret AI feedback critically and ethically.
- Develop institutional guidelines for privacy, voice data, and responsible use of generative AI.

Conclusions

This systematic literature review synthesised evidence on AI-powered pedagogical strategies for developing speaking skills in EFL/ESL contexts. After removing duplicates and incomplete records and replacing them with stronger studies from indexed journals, the final synthesis included 29 studies published between 2021 and 2025. Evidence suggests that AI tools assist in the development of speaking skills by providing additional practice opportunities, real-time feedback, increased learner autonomy, and reduced affective barriers. Conversational chatbots, generative AI tools, ASR systems, AI speech evaluation platforms, and adaptive, informal AI-mediated learning environments were identified as the most effective technologies. Fluency, pronunciation, confidence, motivation, willingness to speak, autonomy, and reduced anxiety were the strongest outcomes of using these tools. The success of AI-based tools depends on how well they are integrated into course design relative to learners' communicative goals, how teachers mediate that process, and the degree to which learners develop the digital literacy skills needed to use them critically. This review of AI-powered speaking pedagogy provides a comprehensive synthesis of the existing evidence and identifies gaps that remain to be addressed in future research.

Suggestions for Future Research

There remains considerable opportunity for future research to explore Latin American EFL contexts, which are largely absent from the reviewed evidence base. Future studies could examine how AI-powered strategies for speaking instruction are used in universities across the region, considering the range of available technology and diverse linguistic and cultural contexts. Longitudinal designs, larger samples, and standardised quality-appraisal reporting would strengthen the evidence base. Research in this area will contribute to the responsible integration of AI into language education, both regionally and globally.

Limitations of the Review

This manuscript represents a refined review based on the available extraction matrix and replacement studies identified from indexed journals. For formal submission to a Scopus or WoS journal, the search log should be updated with exact database results, DOI verification should be completed for all sources, and quality appraisal should be independently checked using a formal tool such as MMAT, JBI, or CASP.

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Conflict of Interest

The authors declare no conflict of interest.

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