



AI TOOLS IN IMPROVING SPEAKING SKILLS: A LITERATURE REVIEW

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ABSTRACT. This study is a systematic literature review that aims to examine the extent to which Artificial Intelligence (AI) and various AI tools are used to improve the speaking skills of English language learners. The main focus of this study is to identify the benefits of using AI in vocabulary, grammar, pronunciation, fluency, and student confidence, while also reviewing the challenges that accompany it, such as technological limitations, ethical issues, and accessibility problems. Based on the preferred reporting items for systematic reviews and meta-analyses (PRISMA) framework, 960 articles published in 2025 from the ERIC database were reviewed, with 7 studies identified as most relevant for further analysis. The findings reveal that AI applications such as chatbots, speech recognition tools, and project-based learning models contribute to improving vocabulary, grammatical accuracy, pronunciation, fluency, and learners' confidence. Moreover, integrating AI with project-based and blended learning approaches fosters collaboration, critical thinking, and more authentic language use. Nevertheless, several challenges remain, including overreliance on technology, reduced human interaction, as well as ethical and accessibility concerns. Therefore, while AI holds considerable promise in transforming speaking instruction, teachers continue to play a crucial role in providing pedagogical guidance, cultural sensitivity, and emotional support. The review also highlights the need for further research to evaluate the long-term impact of AI integration in language education..

Keywords: AI Tools, Artificial Intelligence, Speaking Skills

ABSTRAK. Studi ini merupakan tinjauan pustaka sistematis yang bertujuan untuk mengkaji sejauh mana Kecerdasan Buatan (AI) dan berbagai perangkat AI digunakan untuk meningkatkan keterampilan berbicara pembelajar bahasa Inggris. Fokus utama studi ini adalah mengidentifikasi manfaat penggunaan AI dalam hal kosakata, tata bahasa, pelafalan, kelancaran, dan kepercayaan diri siswa, sekaligus meninjau tantangan yang menyertainya, seperti keterbatasan teknologi, isu etika, dan masalah aksesibilitas. Berdasarkan item pelaporan pilihan untuk kerangka kerja tinjauan sistematis dan meta-analisis (PRISMA), 960 artikel yang diterbitkan pada tahun 2025 dari basis data ERIC telah ditinjau, dengan 7 studi diidentifikasi sebagai yang paling relevan untuk analisis lebih lanjut. Temuan ini mengungkapkan bahwa aplikasi AI seperti chatbot, perangkat pengenalan suara, dan model pembelajaran berbasis proyek berkontribusi pada peningkatan kosakata, akurasi tata bahasa, pelafalan, kelancaran, dan kepercayaan diri pembelajar. Lebih lanjut, mengintegrasikan AI dengan pendekatan pembelajaran berbasis proyek dan pembelajaran campuran mendorong kolaborasi, pemikiran kritis, dan penggunaan bahasa yang lebih autentik. Namun demikian, beberapa tantangan tetap ada, termasuk ketergantungan yang berlebihan pada teknologi, berkurangnya interaksi manusia, serta masalah etika dan aksesibilitas. Oleh karena itu, meskipun AI memiliki potensi besar dalam mentransformasi pengajaran berbicara, guru tetap memainkan peran krusial dalam memberikan bimbingan pedagogis, kepekaan budaya, dan dukungan emosional. Tinjauan ini juga menyoroti perlunya penelitian lebih lanjut untuk mengevaluasi dampak jangka panjang integrasi AI dalam pendidikan bahasa.

Kata Kunci: Perlengkapan AI, Kecerdasan Buatan, Kemampuan Berbicara

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INTRODUCTION

Advances in digital technology have brought about major changes in the world of education, particularly in language learning. One of the most notable innovations is the use of Artificial Intelligence (AI), which is now considered capable of improving the effectiveness of foreign language learning. Globally, the use of AI in language education is considered to be more personalized, interactive, and adaptive than traditional methods (Du & Daniel, 2024). In the context of English language learning, speaking skills remain one of the main challenges for learners, especially those who are learning English as a foreign language. Obstacles such as anxiety, limited opportunities to practice, and a lack of feedback are often factors that hinder the development of speaking skills (Dennis, 2024). The presence of AI-based technology, such as chatbots and voice recognition tools, has begun to provide solutions by creating an authentic practice space, free from the fear of making mistakes, while also providing immediate correction. Recent research findings show that AI-based chatbots can boost confidence, reduce anxiety levels, and improve the pronunciation and fluency of EFL (English as a Foreign Language) students (Du & Daniel, 2024). Meanwhile, AI-based Speech Recognition technology has been proven to provide more accurate feedback, enrich vocabulary, and significantly aid in the development of pronunciation and speaking skills (Dennis, 2024).

Recent research indicates that the use of Artificial Intelligence (AI) has the potential to strengthen students' speaking skills, although there are a number of obstacles that need to be considered. According to research by (Laksana et al., 2024), the application of generative AI such as ChatGPT can provide various benefits, ranging from enriching vocabulary, improving grammar and pronunciation, to increasing confidence in oral communication. However, this research also highlights challenges such as the possibility of over-reliance on AI, the limitations of AI in generating spontaneous conversations, and the lack of authentic human interaction. On the other hand, a literature review conducted by (Marlina et al., 2024) revealed that AI-based technologies, including speech recognition, chatbots, and virtual tutors, can improve fluency and accuracy in speaking by providing a more adaptive and interactive learning experience. However, they also emphasize the importance of considering ethical aspects, such as data security, algorithmic bias, and the need for further research to evaluate the long-term impact of AI in language learning. From these two studies, it can be concluded that although AI has proven to be effective in several aspects, there are still gaps



in research, particularly regarding long-term effectiveness, application in more diverse contexts, and the need for comprehensive studies. This makes this research relevant for presenting a systematic review of how AI can truly support the improvement of speaking skills.

This study aims to analyze the role of Artificial Intelligence (AI) in improving students' speaking skills in language learning. More specifically, this study seeks to identify the benefits of using AI, including enriching vocabulary, improving grammar and pronunciation, and building confidence when speaking. In addition, this study also examines the challenges that arise in the implementation of AI, including technological issues, pedagogical approaches, and ethical issues. In this way, the study is expected to reveal gaps in previous studies as a basis for further research on the effectiveness of AI in the field of language learning.

The basis of this research is the argument that the use of AI, especially generative AI such as ChatGPT, is highly effective in improving speaking skills. AI is considered capable of providing a more adaptive, personalized, and interactive learning process compared to traditional methods. Based on this, the hypothesis proposed is that AI can contribute significantly to improving students' speaking skills, in terms of vocabulary, grammatical structure, and clarity of pronunciation. In addition, AI is expected to foster confidence through intensive and flexible communication exercises. However, this study also proposes the hypothesis that the use of AI in speaking learning still faces obstacles in the form of technological limitations, limited teacher involvement, and ethical and accessibility issues that require further attention.

METHODS

In this study, we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 framework, which consists of 27 criteria as a minimum requirement for demonstrating method rigor, and for achieving clarity and transparency in systematic reviews. A descriptive comparative methodology for literature reviews review aimed to assess the contribution of Artificial Intelligence (AI) to (Booth et al., 2016; Okoli, 2015), served as a guide for this study because this ols in enhancing learners' English speaking skills as compared to traditional instructional methods. The review was limited to



peer-reviewed journal articles published in 2025, which were obtained from the ERIC database. In alignment with the PRISMA framework, the review was conducted in four stages; first, the reviewer identified relevant literature, second, the reviewer screened the literature for duplicates and irrelevant articles, third, the reviewer assessed the full-text articles for eligibility against predetermined inclusion criterion, and finally, the reviewer incorporated the studies. This methodology provided a solid foundation for ensuring systematic and reliable analysis of the review.

Phase 1: Identification Phase

In the first phase of the systematic review, relevant studies were identified using an organized search strategy. This phase comprised of two main activities: collecting potentially relevant articles and assessing which of these articles fitted the inclusion and exclusion criteria defined earlier. As this review examined peer-reviewed scholarly journals, book chapters, white papers, and technical reports were not considered so the review could be more credible. ERIC was the main database for this review, as it is widely recognized for its comprehensive coverage of educational research. For this systematic review, only journal articles published in 2025 were considered. Searching within a single recent year defined the limits of the analysis to the latest developments in the field, which is necessary to avoid outdated conclusions given the rapid growth of published literature in educational technology. To identify relevant literature, several search phrases were employed, including Artificial Intelligence and Artificial Intelligence in Speaking Skills.

Table.1 Source of Journals

<i>Journal Source</i>	<i>Quantity</i>	<i>Keywords</i>
<i>ERIC</i>	<i>960 articles</i>	<i>tificial Intelligence, Artificial Intelligence in Speaking Skills</i>

Phase 2: Screening Phase

At this point, the appropriateness of the gathered articles from ERIC was examined. The remaining studies were examined to make sure they concentrated on using artificial intelligence to help students improve their speaking abilities, and no duplicate entries were discovered.

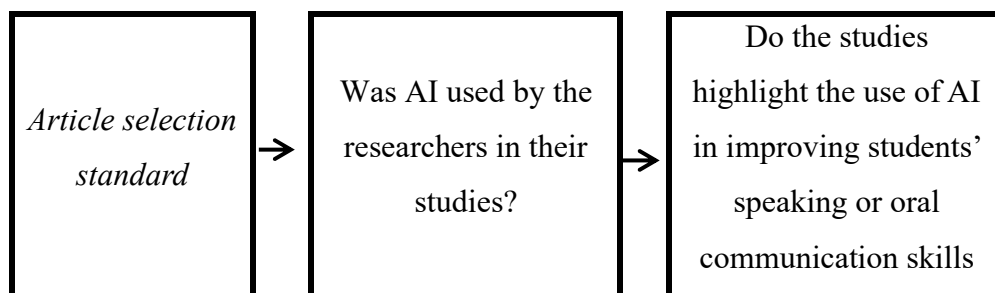
Phase 3: Eligibility

At this phase, the collected articles are critically reviewed to ensure that they meet the inclusion criteria specified in Table 2. This is an important phase where only articles that meet the criteria are included, thereby improving the quality of the research results.

Table.2 Inclusion Criteria

Inclusion
Artificial Intelligence
Artificial Intelligence in Learning English
Research methodologies : quantitative, qualitative, and mixed method
Sample or respondent from various levels of education
Journal articles published in 2025
Studies focusing on speaking skill development or oral communication
Articles written in English

The selected studies focus on researchers who used Artificial Intelligence tools to improve students' speaking skills. These papers were assessed in accordance with the inclusion criteria shown in Chart 1.

**Chart 1. Criteria for assessing and selecting relevant studies*****Phase 4: Exclusion Phase***

After the eligibility screening process in the third phase, several publications were excluded from this systematic literature review. The exclusion criteria are listed in Table 3. As with the eligibility screening stage, this exclusion process was necessary to ensure that only data meeting the criteria were included in this study.



Table.3 Exclusion Criteria

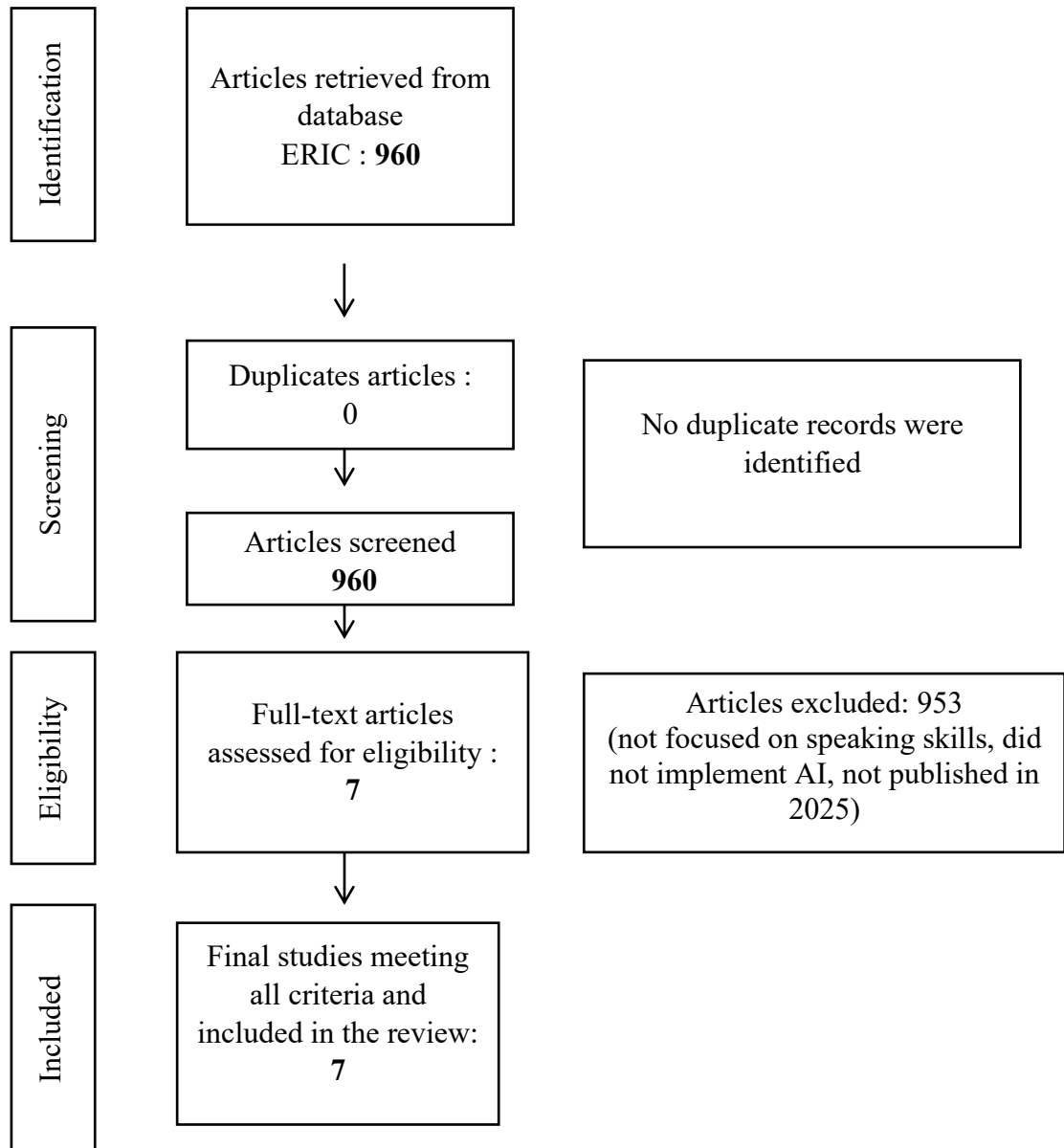
Exclusion
Studies focusing on language skills other than speaking
Studies or learning processes that did not implement or evaluate the use of AI
Articles not published in 2025
Articles not written in English

Following the application of the exclusion criteria specified in Table 3, 7 studies in all met all requirements and were incorporated into the final analysis. The role of artificial intelligence (AI) tools in enhancing students' speaking skills was the focus of these particular studies. Table 4 displays the features of these studies' research design.

Table.4 Number of Studies by Research Design

Research Design	Quantity
Qualitative Design	4
Quantitative Design	1
Mixed-Method Design	2

Chart 2 below provides a step-by-step description of the systematic review process used in this study, covering Phases 1 through 4. The PRISMA 2020 checklist was used to create this flowchart, which guarantees a methodologically sound, transparent, and unambiguous review process.



RESULTS

The findings of the reviewed research papers are presented in this section. After applying several screening phases, seven articles were selected as the most relevant to the focus of this study. These articles provide empirical evidence on the integration of artificial intelligence, digital resources, and project-based models to enhance students' speaking performance in EFL contexts. Table 5 below summarizes the main characteristics and findings of the selected studies.

Table 5. Main Characteristics, Perspectives and perception of using AI Tools in Improving Speaking Skills

Authors	Territory	Study Purpose	Participants	Discussion
EJ1476303	Indonesia.	To evaluate the impact of guided and unguided social media assisted language learning on students study habits, communication skills, and social-emotional aspects.	EFL students at a state university in Indonesia.	Results show that both guided and unguided practices through social media enhanced students' speaking abilities, but only the unguided approach led to a notable rise in their willingness to communicate. The development of social emotional learning was influenced by factors such as engagement, motivation, learning environment, and the support of peers or teachers.
EJ1467828	Indonesia.	To analyze the need for MOOC-based learning materials for flipped speaking classes and to design a suitable model.	English Education students and lecturers at Indonesian universities.	Findings indicate that students require learning resources that are engaging, adaptable, and technologically relevant to strengthen both fluency and accuracy. The suggested MOOC framework incorporates diverse activities, integration with platforms like WhatsApp and Edmodo, and the use of multimedia support.
EJ1480627	Indonesia.	To evaluate the impact of AI-assisted problem-oriented project-based learning on students critical thinking and communication skills.	High school students in Malang, divided into three groups.	Research shows that the integration of AI is more effective in enhancing both critical thinking and communication abilities compared to conventional approaches. The results also highlight that AI can reinforce traditional PBL methods, provided its application remains ethical to avoid fostering dependency.



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- EJ1482230 Indonesia. To examine how EFL teachers integrate AI tools with Nation's Four Strands Framework in developing pre-class modules for flipped classrooms. six Indonesian EFL teachers at the tertiary level. Findings indicate that teachers employ AI to compile input materials, give feedback, design conversation prompts, and create fluency-oriented activities. While AI helps increase efficiency and allows for greater personalization, challenges remain regarding contextual relevance and the reliability of feedback. As a result, teachers continue to play a vital role in ensuring the quality of pedagogy.
- EJ1460119 Indonesia. To identify students difficulties in speaking English and to formulate strategies for enhancing speaking skills in the digital era. 15 students from UIN Sunan Kalijaga Yogyakarta. The findings reveal that the main challenges include limited vocabulary, insufficient practice, pronunciation difficulties, and a less supportive environment. Suggested strategies involve vocabulary memorization, regular speaking practice, the use of digital media, and peer collaboration. Consistency and the integration of technology are emphasized as essential factors for progress.
- EJ1483441 Indonesia. To develop and evaluate a digital book integrated with AI and augmented reality, enriched with elements of Indonesian communication culture for foreign learners in BIPA programs. Foreign students through Indonesian BIPA programs. The results of the study confirm that the main challenges they encounter are language barriers and cultural differences. The use of AI and AR-based digital books supports their linguistic and cultural adaptation, while also deepening their understanding of Indonesian society and communication practices.
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EJ1470471	Indonesia.	To explore master's students self-efficacy in speaking English during hybrid learning and to identify both supporting and hindering factors.	Six master's students of English Education at Sanata Dharma Universit.	Research shows that self-efficacy significantly influences speaking performance. Contributing factors include motivation, social support, prior learning experiences, and the presence of role models, while challenges stem from anxiety, low self-confidence, and limited mastery of the material. Hybrid learning opens up new opportunities but also presents difficulties in maintaining balance between online and face to face interaction.
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DISCUSSIONS

(Suja et al., 2025) examined the effects of guided and unguided social media assisted language learning among EFL students at an Indonesian state university. The findings revealed that while both approaches improved speaking performance, the unguided approach significantly enhanced students' willingness to communicate. Furthermore, social-emotional learning was strongly shaped by engagement, motivation, learning environment, and the support of peers and instructors.

(Agusniati et al., 2025) conducted a needs analysis on MOOC-based instructional materials for flipped speaking classes in Indonesian higher education. The study showed that students and lecturers required materials that are engaging, adaptable, technologically relevant, and able to balance fluency and accuracy. The proposed MOOC model integrates diverse activities, the use of WhatsApp and Edmodo, as well as multimedia support to foster a more flexible and effective learning experience.

(Habibah et al., 2025) evaluated the impact of AI-assisted Problem-Oriented Project-Based Learning (POPBL) on high school students' critical thinking and communication skills in Malang. Results indicated that the integration of AI significantly outperformed both conventional and traditional POPBL approaches in improving these skills. The study emphasized that AI can effectively enrich project-based learning when applied ethically and without encouraging overdependence on technology.

(Rahmawati et al., 2025) investigated how EFL teachers integrate AI tools with Nation's Four Strands Framework to design pre-class modules in flipped classrooms. The study found that teachers used AI to compile input materials, provide feedback, design conversational prompts, and develop fluency-focused activities. Although AI increased efficiency and personalization, challenges remained in terms of contextual relevance and reliability of feedback, highlighting the continued central role of teachers in maintaining pedagogical quality.

(Nurarifah et al., 2025) identified the main difficulties faced by students at UIN Sunan Kalijaga in learning to speak English, which included limited vocabulary, lack of practice, pronunciation problems, and unsupportive environments. To address these issues, the study recommended strategies such as vocabulary memorization, consistent speaking practice, the



use of digital media, and peer collaboration. The findings underlined the importance of consistency and technology integration for improving speaking skills.

(Nurlina et al., 2025) developed a digital book integrated with AI and augmented reality (AR), enriched with Indonesian communication culture, for foreign learners in BIPA programs. The results showed that the greatest challenges for foreign students were language barriers and cultural differences. The digital book not only supported linguistic development but also provided deeper insights into Indonesian cultural communication practices, thereby enhancing both adaptation and intercultural literacy.

Finally, (Yohanes Bagas Nur Setiawan et al., 2025) explored the self-efficacy of six master's students in English education at Sanata Dharma University during hybrid learning. The study found that self-efficacy significantly influenced their speaking performance. Motivation, social support, prior learning experiences, and role models were identified as contributing factors, while anxiety, low self-confidence, and limited mastery of material served as hindrances. Although hybrid learning offered new opportunities, students still faced challenges in balancing online and face-to-face interaction.

CONCLUSIONS

The integration of Artificial Intelligence (AI) technology in English language education has changed the way we improve speaking skills. Traditional teaching methods usually provide limited practice opportunities, but artificial intelligence (AI) offers instant feedback to learners by customizing the learning experience to increase confidence and fluency, as well as creating a comfortable practice space. Research consistently shows that when AI tools are implemented in the classroom, students demonstrate significant improvement in various aspects such as vocabulary mastery, pronunciation fluency, and overall communication skills.

In addition, project-based learning and blended learning approaches enhanced by AI can encourage group collaboration, analytical thinking, and more authentic English language application, making the educational journey more interesting and meaningful. This methodology also encourages students to engage in real-world scenarios where they can apply their language skills practically and easily through collaborative projects. Learners not



only develop their linguistic competence but also other skills such as problem solving and creativity, while artificial intelligence (AI) provides personalized guidance throughout the process.

Crucially, educators continue to play an essential role. While AI can customize and speed up the learning process, it cannot substitute the teaching expertise, cultural awareness, and emotional guidance that instructors provide. Challenges such as student anxiety, feedback accuracy issues, and excessive technology dependence highlight the need for a balanced approach between automated systems and human mentorship. This ensures AI serves as a supportive companion rather than a replacement in language education.

In conclusion, these findings indicate that AI can revolutionize language learning into a more engaging, individualized, and forward-thinking experience. When educators implement these technologies thoughtfully, they can create learning spaces that are welcoming, inspiring, and long-lasting. As digital innovations continue advancing, their careful implementation will not only enhance students' speaking abilities but also equip them with the flexibility and communication competencies required in our increasingly connected global society.

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