LEVERAGING ARTIFICIAL INTELLIGENCE FOR ELT: A SYSTEMATIC REVIEW

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ABSTRACT

Artificial Intelligence (AI) in English language learning (ELT) is growing rapidly, offering personalized learning, instant feedback, and better student engagement. However, challenges include usage ethics, technology dependence, and educator readiness. Prior research on AI's advantages and difficulties in ELT is summarized here. A systematic review using the PRISMA method analysed 15 studies from various academic sources related to AI in English language learning, such as PubMed, ScienceDirect, Taylor & Francis, and Mendeley. AI has been found to improve students' language skills, motivation, and engagement through tools such as chatbots and machine learning. However, challenges such as plagiarism, lack of long-term studies, and educator readiness still need to be addressed. AI has the potential to improve ELT, but it requires a mature implementation strategy to address ethical challenges, teacher training, and long-term effectiveness.

Keywords: AI in education, Artificial Intelligence, English language teaching, systematic review

INTRODUCTION

In recent years, academics and education professionals have been paying more and more attention to research on the use of artificial intelligence (AI) technology in teaching English as a second language (ELT). The swift advancement of artificial intelligence (AI) has profoundly changed several industries, including education. In English Language Teaching (ELT), AI-powered tools have been increasingly adopted to enhance learning experiences by providing personalized instruction, automated feedback, and interactive engagement (Soyombo-erdene, 2024). Artificial intelligence (AI) tools, including machine learning, natural language processing, and adaptive learning platforms, have been incorporated into language instruction to help students become more proficient in the language (Patiño et al., 2024).

Technology has played an increasingly significant role in English language teaching (ELT), not only in traditional classrooms but also in digital and extracurricular settings. Studies have shown that computer-assisted language learning (CALL), e-

learning platforms, and digital applications—such as virtual reality tools and mobile language apps—can enhance vocabulary, grammar, pronunciation, and writing skills by facilitating collaboration, interaction, and personalized learning experiences (Lee, Zou, & Gu, 2024; Azamatova, 2023). These technologies offer new opportunities to improve both receptive and productive language skills through interactive and adaptive instruction.

More recently, artificial intelligence (AI) has emerged as a transformative force in ELT by offering real-time feedback, personalized learning paths, and immersive language practice environments. AI-powered applications, including chatbots, adaptive learning platforms, and writing support tools like Grammarly, Duolingo, and ELSA Speak, have been shown to increase students' motivation, engagement, and language proficiency (Kumar & Sharma, 2024; Anggraini & Faisal, 2024). AI tools provide customized instruction based on learners' needs and allow them to practice language skills more effectively through instant feedback and interactive simulations. Despite these benefits, concerns about ethical issues, such as data privacy, algorithmic bias, and equitable access, remain significant challenges to be addressed in AI-integrated language education.

The presence of AI in education is sometimes accompanied by ethical challenges and concerns regarding fairness and accountability in its implementation. Despite its potential benefits, AI implementation in ELT also presents several challenges. Ethical concerns are issues that cast doubt on the sustainability and equity of AI-driven learning settings, including data privacy, algorithmic bias, and excessive dependence on technology. (Holmes et al., 2022) (Abdul-Aziz Mohammed Al-Othman, 2024). Additionally, educators' readiness to integrate AI into teaching practices remains a significant issue, as many teachers lack the necessary training and resources to effectively utilize AI-based tools. (Salam et al., 2024). Furthermore, accessibility disparities in different educational contexts may hinder the equitable distribution of AI benefits, especially in underprivileged regions (Rui & Badarch, 2022).

The use of AI technology in education has increased as a result of the COVID-19 pandemic, particularly when it comes to distance learning. The application of this technology allows education to continue despite physical restrictions, and AI offers solutions to improve the learning experience on digital platforms. (Salam et al., 2024).

The use of chatbots, automated evaluation systems, and AI-based virtual classes is recognized to increase student engagement and provide a more interactive learning experience. (Abdul-Aziz Mohammed Al-Othman, 2024). In the context of ELT, AI technology not only helps in the delivery of material but also in evaluating speaking and listening abilities in English (Ma et al., 2023).

Furthermore, the current literature shows that while AI applications in ELT offer many advantages, challenges still exist and require further attention. The application of advanced AI systems can help redefine teaching methodologies in language education, but it's crucial to consider the larger educational context and guarantee accessibility and inclusivity for every student (Rui & Badarch, 2022). Therefore, to systematically assess the efficacy of using AI in language instruction, further study is required. including its suitability and impact on overall teaching and learning (He et al., 2024).

While several studies have explored the advantages and limitations of AI in ELT, there is still a lack of systematic synthesis that comprehensively examines its implementation across different educational settings.

For instance, Kumar and Sharma (2024) emphasized how AI enhances English learning by providing real-time feedback and personalized instruction, particularly in improving vocabulary, grammar, and creative writing. Lai and Lee (2024) systematically reviewed conversational AI tools, such as ChatGPT and Google Assistant, highlighting their benefits in enhancing speaking, reading, and cognitive skills. Similarly, AlTwijri and Alghizzi (2024) found that AI applications such as chatbots and AI language platforms can reduce learner anxiety and increase motivation in English as a Foreign Language (EFL) classrooms.

To address these gaps and contribute new insights, this study provides a systematic synthesis of recent empirical research on AI applications in ELT, with a specific focus on their advantages, challenges, and ethical implications across diverse educational contexts. This approach offers a more comprehensive and balanced understanding of AI’s role in language education, representing this review's novelty.

Therefore, to fill these identified gaps and guide future research and practice, this study seeks to answer the following research questions: 1. How have various educational contexts incorporated artificial intelligence (AI) technologies into English language teaching (ELT)? 2. What are the advantages and difficulties of implementing

AI-based tools in ELT, specifically in improving learning outcomes and student engagement? 3. What effects do accessibility and ethical considerations have on the use of AI in English language instruction? Through a methodical examination of the body of current literature, this study provides insights into the role of AI in ELT and offers recommendations for educators, policymakers, and researchers on how to optimize AI integration in language teaching while addressing its challenges.

METHODS

Description of Sample

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) are followed in this work (Moher et al., 2009). Guidelines to ensure a rigorous and transparent selection process and using several keywords that the author has determined according to the topic of the title of the systematic literature review. Keywords used in the search include Artificial Intelligence AND/OR English Language Teaching, AI AND/OR ELT. Searches were conducted in several academic journal databases, including PubMed, ScienceDirect, Mendeley, and Taylor & Francis Online. The study covered a specific period, i.e., articles published between January 1, 2020, and January 30, 2025, that met the inclusion criteria.

Procedure

The article selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards, this study was conducted.

Table 1

Summarizes The Selection Steps Carried Out

Step	Description	Action Taken
1. Identification (Identification of Initial Studies)	Collect articles from academic databases using predefined keywords.	Two reviewers searched articles on Mendeley, ScienceDirect, PubMed, and Taylor & Francis Online using the keywords Artificial Intelligence AND/OR English Language Teaching (AI AND/OR ELT). As a result, **465** articles were found before the screening process.
2. Screening	Remove duplicate articles and review titles and abstracts to determine relevance.	Recurring articles **(n=6)** are deleted using the n duplicate check feature in Mendeley. Then, the title and abstract were checked, resulting in **n=414** articles being removed as irrelevant.
3. Eligibility (Full-Text Feasibility Evaluation)	Examine the study's viability in light of the inclusion-exclusion criteria and complete text.	**45** articles that passed the abstract stage were checked for full text. However, **5** articles were not accessible, so only **40** articles were further evaluated. Of these, **14** articles were removed for not meeting the inclusion criteria, and **11** articles were removed due to accessibility limitations.
4. Inclusion (Selected articles for Analysis)	Studies that met all criteria were included in the systematic analysis.	After the final selection, **15** articles were selected for analysis in this study.

Study Selection Criteria

Empirical papers that satisfied the following inclusion criteria and were published between 2020 and 2024 were included in this review: (1) listed in ScienceDirect, Mendeley, PubMed, or Taylor & Francis Online, (2) focused on AI applications in ELT, (3) written in English, (4) conducted in an educational setting with students as participants, and (5) available in full-text format. Studies were excluded if they (1) involved working professionals instead of students, (2) focused on AI in disciplines other than ELT, (3) were literature reviews or meta-analyses rather than empirical research, or (4) did not explicitly address AI's effects on teaching and learning English.

These criteria ensured that the selected studies provided relevant and high-quality insights into the role of AI in ELT.

RESULTS AND DISCUSSIONS

Result

The data collected from 15 selected studies provides comprehensive insights into the integration of English Language Teaching (ELT) using artificial intelligence (AI). The findings indicate that AI has been widely adopted in various aspects of ELT, particularly in language skill development, personalized learning, and automated feedback systems. AI-driven technologies like neural machine translation, chatbots, and adaptive learning platforms have significantly enhanced students' engagement and motivation. (AlTwijri & Alghizzi, 2024). However, while AI contributes to improving learning outcomes, challenges such as ethical concerns, accessibility issues, and the need for teacher training remain persistent (Sharadgah & Sa'di, 2022).

A careful assessment of the research reveals AI's dual effects on ELT. On the one hand, AI-driven applications provide immediate feedback, foster independent learning, and enable real-time assessment, aligning with constructivist learning theories that emphasize active learner engagement (Kumar & Sharma, 2024). On the other side, studies warn about the over-reliance on AI, potential biases in machine learning algorithms, and the possibility of limiting human contact in the learning process (Mijwil et al., 2023). These findings align with Vygotsky's sociocultural theory, which stresses the importance of human-mediated learning experiences. Thus, while AI serves as a powerful supplement to ELT, its effectiveness depends on how well it is integrated with human instruction.

The interpretation of these findings implies that rather than taking the place of conventional teaching techniques, AI should be viewed as an aid. The systematic literature review reveals that the most effective AI implementations occur when teachers actively guide students in using AI tools rather than allowing full automation (Silcheva et al., 2023). Furthermore, accessibility challenges and ethical concerns, including data privacy and algorithmic bias, require immediate attention to ensure AI benefits all learners equally (Zulkarnain & Md Yunus, 2023). These findings provide a

strong foundation for future research, emphasizing the need for balanced AI integration in ELT while maintaining equitable access and ethical standards.

The research outcomes of each platform are given in Table 2. This report is by the *Preferred Items for Systematic Review and Meta-analysis* (PRISMA) reporting guidelines (Moher et al., 2009). The PRISMA flow chart (Figure 1) explains the article selection process.

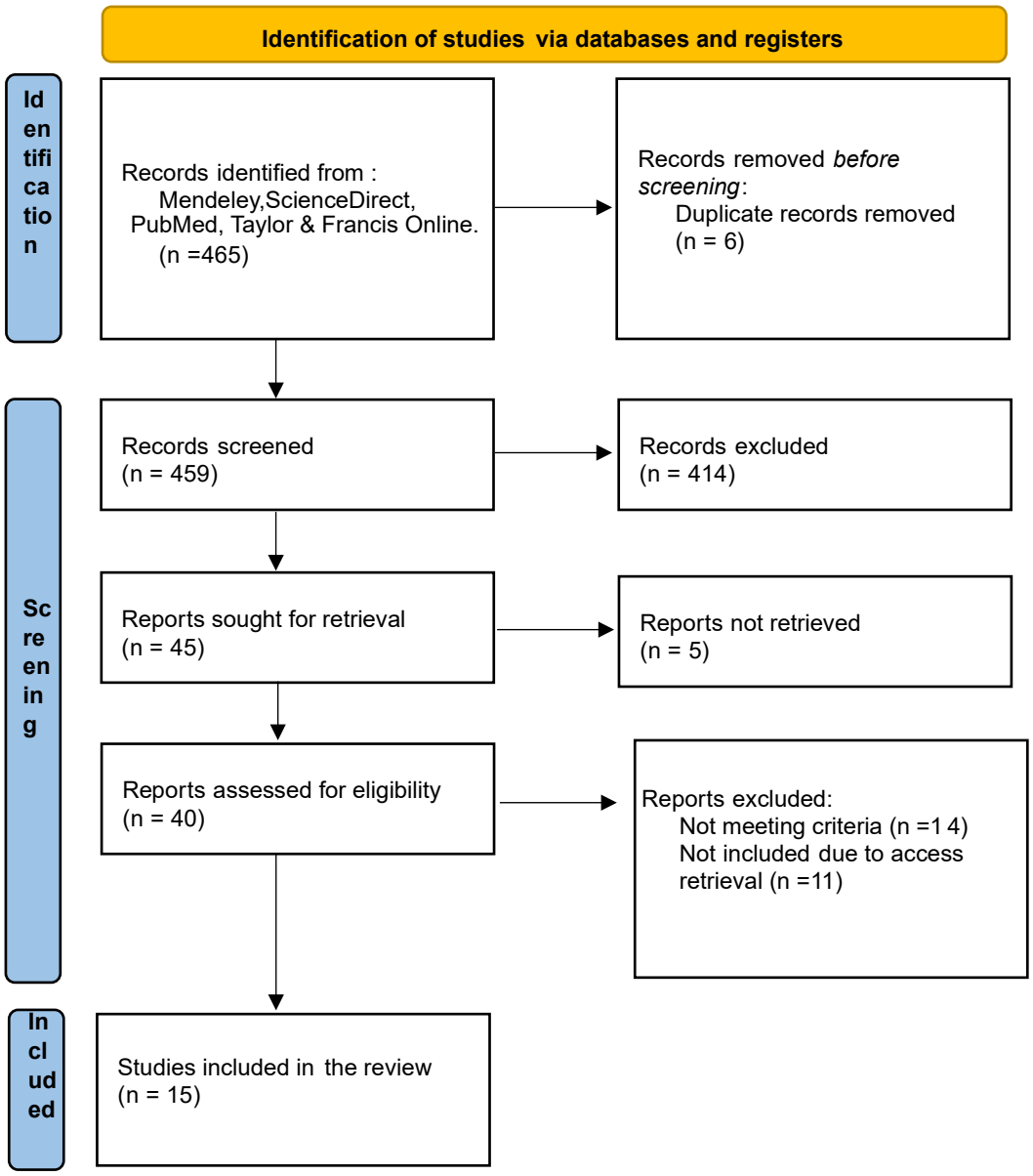

Figure 1: PRISMA Flow

Table 2.
An overview and features of the chosen final studies.

Author, Year, Country	Research Methods	AI Technology Used & Language Skills Affected	Main Results	Benefit	Challenge
(Akbarani, 2024). Indonesia	A descriptive qualitative method, the use of questionnaires as a data collection tool, Quantitative design with purposive sampling of 10 university students	Grammarly, QuillBot, Chat GPT, Plagiarism Checker, and Paraphrasing Tool.com. Speaking, Writing, Reading	The majority of pupils concur that teaching English requires artificial intelligence. Depending on how it is used, AI can have both beneficial and detrimental effects on learning English. AI tools help improve students' English skills, including speaking, writing, and reading.	Provides personalized instruction and immediate feedback. Enhances language learning experiences. Reduces the burden on teachers and improves teaching quality.	-Potential negative impacts if AI is used incorrectly (e.g., plagiarism). -Need for appropriate timing and context for effective use of AI in learning.
(AlTwijri & Alghizzi, 2024) Riyadh Saudi Arabia	Analysis of 64 articles, with 21 relevant studies selected for detailed review	Chatbots (e.g., ChatGPT, MOCA) AI language learning platforms Conversational agents. Speaking Writing Vocabulary Grammar	AI technologies positively influence EFL learners' motivation, engagement, and attitudes. AI applications can reduce learning anxiety among EFL learners. Further study is necessary as the incorporation of AI in EFL contexts is still in its infancy.	Enhances learners' motivation and engagement. Offers customized educational opportunities. Provides prompt assistance and feedback. It lessens the tension that comes with learning a language.	There is little data on AI's long-term efficacy in EFL settings. There is a need for more comprehensive studies to understand the impact on various affective factors. There is a need for teacher training in AI integration and ethical issues.
(Tobing et al., 2023) Indonesia	Analysis of experimental studies published from January 2018 to December 2022	Mobile applications (e.g., vocabulary learning apps) Chatbots Virtual Reality (VR) Neural Machine Translation (NMT). Vocabulary acquisition Speaking skills Reading comprehension Writing skills	Lack of innovative technologies like chatbots and VR in foreign language education. Mobile apps primarily focus on vocabulary acquisition. Teachers are aware of modern technologies but do not effectively integrate them into teaching. The positive impact of mobile apps on vocabulary retention and student motivation.	Improved vocabulary retention and acquisition. Increased student motivation and engagement in learning. Enhanced language proficiency through the use of technology.	Inadequate incorporation of cutting-edge technologies into instructional strategies. Teachers must receive instruction on how to use AI tools effectively. There is little scientific data regarding these tools' long-term efficacy in language learning.

(Sharadgah, 2022). Saudi Arabia	Qualitative research method Five-step review process analyzing 200 articles, with 64 retained for detailed analysis	Deep learning, chatbots, expert systems, machine learning, neural networks, natural language processing, and data mining - Speaking - Writing - Reading - Listening -Translation	AI's benefits for improving student happiness, evaluation, translation, and English language proficiency. Increased publication of articles on AI in ELT, with a focus on mixed research methods. Identification of research gaps, particularly in areas like body language and emotional recognition.	Enhanced personalized learning experiences. Improved student engagement and motivation. Reduction in teacher workload through automated systems. Better assessment and feedback mechanisms.	- AI in ELT is still in its infancy with limited research. There are gaps in the literature about how AI can be used in instructional strategies and materials. More thorough research on the difficulties and efficacy of AI applications in language acquisition is required.
(Mijwil et al., 2023). Baghdad, Iraq	Examining the body of research on AI applications in English language instruction, analyzing significant e-learning applications and initiatives	Machine learning algorithms Artificial neural networks Deep learning techniques. Reading Writing Speaking Listening	Identification of significant AI applications that enhance the teaching of English electronically. AI applications are crucial for developing effective e-learning environments. The study concludes that AI has a promising future in language teaching.	Improved efficiency and effectiveness in language teaching. Enhanced learning experiences through personalized instruction. The capacity to process and evaluate vast amounts of data to make better educational decisions.	The use of AI in education and its ethical implications. AI technologies must be continuously developed and adapted for use in teaching methods. - Potential resistance from educators in adopting new technologies.
(Silcheva et al., 2023). Russia.	-Experimental study involving 186 undergraduate students -Use of mathematical statistics: Pearson's chi-squared test	ChatGPT (textbased chatbot) Midjourney (graphical image generation). English language skills, particularly in creative writing and formulation of clear commands.	Positive dynamics in generating creative statements and texts in a foreign language indicate that neural networks can effectively simulate native-speaker interaction and assist in language learning.	Enhanced practice of English language skills at an individual pace, improved engagement through innovative technology, and development of personalized educational trajectories.	Limited prior experience with AI tools in Russian educational practice, may hinder effective implementation and understanding among students and educators.
(Mukhallafi, 2020). Saudi Arabia.	-Analytical descriptive approach - using a 40-item survey to collect information from 44 male students who were chosen at random	Various AI applications and strategies for teaching/learning English (specific technologies not detailed). English language proficiency in speaking, writing, listening, and reading.	identification of appropriate AI-based teaching and learning strategies for English, with a notable lack of real-world implementation of these tactics despite their efficacy.	The possibility of using AI to increase student involvement, boost the efficiency of English language teaching and learning procedures, and offer personalized learning experiences.	Low levels of real AI application use in English teaching and learning suggest that resources and training are needed to successfully apply these technologies in educational settings.
(Rukiati et al., 2023). Indonesia	thorough examination of the body of research on artificial intelligence (AI) in English language	Various AI-powered applications and platforms (e.g., ChatGPT, Duolingo, Grammarly, ELSA	AI presents risks, such as diminishing the importance of human teachers and possible biases in AI	Heightened engagement in language learning, better-individualized learning experiences, real-time feedback, and greater	Risks of dehumanization of language learning, over-reliance on technology, potential biases in AI, privacy

	teaching (ELT), including books, journals, and other sources	Speak). English language proficiency in reading, writing, speaking, and listening.	algorithms, but it also has the potential to improve language acquisition by increasing engagement, offering tailored feedback, and streamlining the learning process.	accessibility.	concerns, and the need for quality assurance in AI applications.
(Zhang et al., 2023). China	Improved accessibility, real-time feedback, more personalized learning experiences, and increased interest in language acquisition. Literature review and theoretical framework development	Artificial Intelligence (AI) technology integrated with smart classroom teaching. English language skills, particularly in reading, writing, speaking, and cultural understanding.	By giving tailored learning experiences, real-time feedback, and interactive engagement, AI technology integration in smart classrooms improves students' language and cultural literacy.	Enhanced comprehension of the cultural background of English literature and language, more individualized learning opportunities, and more student involvement.	Traditional teaching methods being less effective, the need for innovative teaching strategies, and potential resistance to adopting new technologies in educational settings.
(Shi et al., 2023). United States	Theoretical investigation utilizing independent learning fundamental theory and multimodal blended learning theory Proposal of new models for deep learning and human job functions	Artificial Intelligence (AI) technologies, including cloud computing and big data. English language skills, particularly in reading, writing, and overall language proficiency	The study shows how AI may improve student learning outcomes and the efficacy of blended learning by offering a roadmap for incorporating AI into college-level English courses.	- Enhanced teaching and learning experiences, improved student engagement, personalized instruction, and better alignment with modern educational needs.	The requirement for appropriate technology infrastructure in educational settings, opposition to change, and a lack of teacher training in AI technologies are some of the obstacles to adoption.
(Lai & Lee, 2024). HongKong	32 papers were systematically reviewed with an emphasis on learning outcomes, research methodologies, tool kinds, publishing patterns, and variables affecting the application of conversational AI in English language teaching (ELT).	Various conversational AI tools, with a focus on Google Assistant and ChatGPT. English language skills, particularly speaking, reading, writing, and cognitive skills.	The review highlighted important aspects impacting user perceptions and actions and discovered a steady rise in publications on conversational AI tools in ELT with favorable results in affective and cognitive skills.	Conversational AI tools enhance student engagement, improve language proficiency, and provide personalized learning experiences.	Concerns regarding the ethical use of AI tools in education, the need for more rigorous experimental designs, and the scarcity of research contexts mostly concentrated on Asian EFL settings.
(J. Li et al., 2024). China	Two groups of graduate students participated in the experimental study; Group A used an online peer evaluation system, whereas Group B used conventional teaching techniques.	Online peer evaluation system with an automatic recommendation mechanism based on artificial intelligence. English academic writing ability	When compared to conventional teaching techniques, the online peer evaluation system greatly enhanced graduate students' academic writing quality and English writing scores.	Enhanced student participation, critical thinking, and writing skills through peer evaluation and feedback.	Traditional peer evaluation systems had problems with students' poor interpersonal behavior, which the new approach seeks to fix with structured coaching and tailored recommendations.
(Hınız, n.d. 2024). Turki	Explanatory sequential mixed-method design that blends qualitative	Generative Artificial Intelligence (GAI) tools, including	There was a high level of student acceptance of GAI tools. With significant	Enhanced efficiency, improved engagement, increased linguistic confidence, and	Concerns about over-reliance on AI, ethical considerations regarding academic

	and quantitative data analysis (Kennedy-Theil regression, descriptive statistics, Mann-Whitney U tests, and Spearman correlation analysis) Thematic analysis from structured written interviews	applications like ChatGPT and other AI writing tools. English language learning, specifically writing and communication skills.	improvements in engagement and perceived efficiency in English learning, no significant correlation was found between GAI usage and GPA.	personalized learning experiences through immediate feedback and support from GAI tools.	integrity and the potential for superficial engagement with language tasks. Teachers emphasized the need for responsible AI integration in teaching methods as well as the challenges in evaluating students' progress as a result of its use.
(Lo, 2025). United Kingdom	Thematic analysis and Interpretative Phenomenological Analysis (IPA) was used to examine a qualitative study design that included reflective diaries, roundtable discussions, classroom observations, and video-stimulated recall interviews.	Generative AI (GenAI), including speech synthesis and ChatGPT. English language skills, particularly in understanding and using diverse English varieties	AI enhances efficiency in developing GE-oriented materials, supports student-centered design, and boosts student engagement, but it faces challenges such as rigid curricula and AI inaccuracies.	Increased efficiency in material development, enhanced student engagement, and the ability to create diverse language resources.	Rigid curricular structures, inaccuracies in AI outputs, technical issues, and the irreplaceable role of teachers in providing unique insights.
(Wang & Yan, 2022). China	An experimental study comparing a teaching method integrating the Production Approach (POA) with conventional techniques, employing an evaluation Backpropagation Neural Network (BPNN).	Back Propagation Neural Network (BPNN) for detecting English reading levels. English reading skills	The POA-integrated teaching method significantly improved students' English reading levels compared to traditional methods.	Improved student engagement, better alignment of teaching with individual learning needs, and enhanced overall reading proficiency.	The need for continuous adaptation of teaching methods and potential limitations in data used for model training, which may affect accuracy.

Discussion

This study synthesizes findings from 15 research articles on the last ten years' incorporation of artificial intelligence (AI) into English language instruction (ELT). According to the report, artificial intelligence (AI) is essential for improving the efficacy of language acquisition through a variety of technology applications, including chatbots, automated feedback systems, and adaptive learning platforms (AlTwijri & Alghizzi, 2024). However, alongside its benefits, several ethical, accessibility, and pedagogical challenges remain significant hurdles in the implementation of AI in ELT (Sharadgah, 2022).

Table 3.
Distribution of Selected Studies by Year of Publication

Year of publication	Total articles
2020	1
2022	2
2023	6
2024	5
2025	1
Total	**15**

Table 2 shows the distribution of publication years of the analyzed studies. The majority of AI-related research in ELT was published in 2023 and 2024, reflecting the growing interest in this topic in recent years. Only one study was published in 2020, showing that the adoption of AI in ELTs is still growing. This confirms that research on AI in English learning is still in the exploration stage and requires further study.

Table 4.
Regional Distributions of Studies

Countries	Total Articles
Indonesia	3
Saudi Arabia	3
Turkey	1
Iraq	1
Russia	1
China	3
Hongkong	1
United Kingdom	1
United States	1

Table 3 shows the geographic distribution of research on AI in ELT. Indonesia and Saudi Arabia are the countries with the highest number of studies (3 studies each), which shows a strong interest in AI in language education in both countries. China also has a significant number of studies, reflecting the development of AI technology in education in Asia. However, there are still limitations in the representation of research from other regions, such as Africa or Latin America, which could be an opportunity for further research in the future.

1. Integration of AI Technologies in ELT

The results of this review indicate that various AI technologies, such as chatbots, adaptive learning platforms, neural machine translation, and automated feedback systems, have been widely integrated into English language teaching across diverse educational contexts. These tools have been applied to enhance multiple language skills, including reading, writing, speaking, and listening, both in formal classrooms and digital platforms (AlTwijri & Alghizzi, 2024; Mijwil et al., 2023).

This finding aligns with the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes that effective integration of technology in education requires a balance of technological, pedagogical, and content knowledge. AI-powered tools support personalized instruction and interactive engagement, offering learners tailored experiences that adjust to their proficiency levels (Kumar & Sharma, 2024). Such integration is consistent with constructivist learning theories, which advocate for active learner involvement and scaffolded learning environments.

These insights suggest that AI technologies can serve as valuable supplements to traditional ELT methodologies, enabling students to access diverse learning resources and practice opportunities that may not be available in conventional settings.

2. Advantages and Challenges of AI-Based Tools in ELT

The reviewed studies highlight that AI-based tools significantly enhance learning outcomes and student engagement by providing immediate feedback, promoting self-paced learning, and increasing motivation (Silcheva et al., 2023). Tools like Grammarly, Duolingo, and ChatGPT allow learners to refine their language skills through instant corrections, simulated conversations, and adaptive exercises.

This supports Vygotsky's sociocultural theory, which emphasizes the importance of interaction and feedback in language development. AI-powered platforms provide timely scaffolding that can enhance learners' zone of proximal development (ZPD), enabling more effective language acquisition (Zulkarnain & Md Yunus, 2023).

However, challenges such as potential over-reliance on technology, lack of teacher training, and limited long-term evidence of effectiveness were frequently noted (Sharadgah & Sa'di, 2022). These obstacles resonate with the Cognitive Load Theory, suggesting that poorly designed AI applications may overwhelm learners, hindering cognitive processing. Therefore, while AI enhances motivation and proficiency, its effectiveness depends on how

well educators integrate these tools with pedagogical strategies, ensuring a balanced approach.

3. Ethical and Accessibility Considerations in AI Integration

The findings also emphasize that ethical and accessibility issues are critical factors influencing AI implementation in ELT. Concerns about data privacy, algorithmic bias, and unequal access to digital resources were prevalent, especially in underprivileged regions (Holmes et al., 2022; Abdul-Aziz Mohammed Al-Othman, 2024).

These challenges align with the Ethics of AI in Education framework proposed by Holmes et al. (2022), which stresses the need for transparency, accountability, and fairness in AI-driven educational environments. If unaddressed, these issues can exacerbate the digital divide, limiting equitable opportunities for language learning.

Additionally, Equity Theory highlights that perceived fairness and access to learning resources influence students' motivation and engagement. Ensuring that AI tools are accessible, affordable, and ethically designed is essential to maximize their benefits across diverse learner populations. These findings underline the importance of policy support, ethical guidelines, and infrastructure investment to ensure responsible and inclusive use of AI in ELT.

CONCLUSION

This systematic review aimed to synthesize recent empirical studies on the applications of artificial intelligence (AI) in English language teaching (ELT), focusing on their advantages, challenges, and ethical implications across diverse educational contexts.

In response to the first research question, the findings demonstrate that AI technologies such as chatbots, adaptive learning platforms, automated feedback systems, and neural machine translation have been integrated into various educational contexts to enhance language skill development, personalized learning, and real-time assessment. These technologies have been applied both in formal classroom settings and digital platforms to support reading, writing, speaking, and listening skills.

Regarding the second research question, the review reveals that AI-based tools contribute significantly to improving students' learning outcomes and engagement by offering immediate feedback, fostering independent learning, and increasing motivation. However, challenges remain, including the risk of over-reliance on technology, limited teacher training, potential biases in AI algorithms, and insufficient evidence on long-term effectiveness.

In relation to the third research question, the study highlights that accessibility and ethical considerations play a critical role in shaping AI integration in ELT. Barriers such as unequal access to digital resources, data privacy concerns, and algorithmic bias may hinder equitable AI implementation, particularly in underprivileged regions. Addressing these issues requires robust policy support, teacher training, and ethical guidelines to ensure inclusive and fair use of AI-powered educational tools.

Overall, this review emphasizes that while AI has great potential to enhance English language education, its successful integration depends on a balanced approach that combines technological innovations with pedagogical strategies and ethical practices. Future research should continue to explore sustainable implementation models, address accessibility challenges, and ensure that AI benefits all learners equally, regardless of their background.

REFERENCES

Abdul-Aziz Mohammed Al-Othman, A. (2024). Using Artificial Intelligence in English As A Foreign Language Classrooms: Ethical Concerns and Future Prospects. *Arab World English Journal*, *10*, 85–104. https://doi.org/10.24093/awej/call10.7

Akbarani, R. (2024). Use Of Artificial Intelligence In English Language Teaching. *International Journal of English Learning and Applied Linguistics (IJELAL)*, *4*(1). https://doi.org/10.21111/ijelal.v4i1.10756

AlTwijri, L., & Alghizzi, T. M. (2024). Investigating the integration of artificial intelligence in English as foreign language classes for enhancing learners' affective factors: A systematic review. *Heliyon*, *10*(10), e31053. https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e31053

Anggraini, A., & Faisal, F. (2024). The Use of Artificial Intelligence-Based Technology in English Language Teaching. *Golden Ratio of Data in Summary*, *4*, 950–957. https://doi.org/10.52970/grdis.v4i2.749

Azamatova, G. (2023). *Teaching English With Ict Tools*. 98–99. https://doi.org/10.61587/mmit.uz.vi.20

He, X., Cao, X., & Liu, J. (2024). The Application and Effect of AIGC in IELTS Learning/Teaching. *Journal of Higher Education Research*, *5*(2), 133. https://doi.org/10.32629/jher.v5i2.2423

Hınız, G. (n.d.). A year of generative AI in English language teaching and learning - A case study. *Journal of Research on Technology in Education*, 1–21.

https://doi.org/10.1080/15391523.2024.2404132

Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., Santos, O. C., Rodrigo, M. T., Cukurova, M., Bittencourt, I. I., & Koedinger, K. R. (2022). Ethics of AI in Education: Towards a Community-Wide Framework. *International Journal of Artificial Intelligence in Education*, *32*(3), 504–526. https://doi.org/10.1007/s40593-021-00239-1

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). Exploring generative artificial intelligence preparedness among university language instructors: A case study. *Computers and Education: Artificial Intelligence*, *5*(June), 100156. https://doi.org/10.1016/j.caeai.2023.100156

Kumar, S., & Sharma, N. (2024). *Artificial Intelligence in English Language Teaching (ELT): Revolutionizing and Enhancing ELT with AI*. Amazon Digital Services LLC - Kdp.

Lai, W. Y. W., & Lee, J. S. (2024). A systematic review of conversational AI tools in ELT: Publication trends, tools, research methods, learning outcomes, and antecedents. *Computers and Education: Artificial Intelligence*, *7*(August), 100291. https://doi.org/10.1016/j.caeai.2024.100291

Lee, J. S., Zou, D., & Gu, M. M. (2024). *Technology and English Language Teaching in a Changing World: A Practical Guide for Teachers and Teacher Educators*. Springer International Publishing, Imprint: Palgrave Macmillan.

Li, B., Yue, L., Nie, H., Cao, Z., Chai, X., Peng, B., Zhang, T., & Huang, W. (2024). The effect of intelligent management interventions in intensive care units to reduce false alarms: An integrative review. *International Journal of Nursing Sciences*, *11*(1), 133–142. https://doi.org/https://doi.org/10.1016/j.ijnss.2023.12.008

Li, J., Zong, H., Wu, E., Wu, R., Peng, Z., Zhao, J., Yang, L., Xie, H., & Shen, B. (2024). Exploring the potential of artificial intelligence to enhance the writing of english academic papers by non-native english-speaking medical students - the educational application of ChatGPT. *BMC Medical Education*, *24*(1), 1–8. https://doi.org/10.1186/s12909-024-05738-y

Li, X., & Ding, S. (2022). Interpersonal Interface System of Multimedia Intelligent English Translation Based on Deep Learning. *Scientific Programming*, *2022*. https://doi.org/10.1155/2022/8027003

Lo, A. W. T. (2025). The educational affordances and challenges of generative AI in Global Englishes-oriented materials development and implementation: A critical ecological perspective. *System*, *130*(February), 103610.

https://doi.org/10.1016/j.system.2025.103610

Ma, Y., Huang, Y., & Wang, Q. (2023). Exploring ChatGPT in Language Teaching for Higher Education in China. *Lecture Notes in Education Psychology and Public Media*, *18*(1), 265–271. https://doi.org/10.54254/2753-7048/18/20231337

Mijwil, M. M., Abdulrhman, S. H., Abttan, R. A., Faieq, A. K., & Alkhazraji, A. (2023). Artificial Intelligence Applications in English Language Teaching: A Short Survey. *Asian Journal of Applied Sciences*, *10*(6), 469–474. https://doi.org/10.24203/ajas.v10i6.7111

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, t. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of Internal Medicine*, *151*(4), 264–269.

Mukhallafi, T. R. Al. (2020). Using Artificial Intelligence for Developing English Language Teaching/Learning: An Analytical Study from University Students' Perspective. *International Journal of English Linguistics*, *10*(6), 40. https://doi.org/10.5539/ijel.v10n6p40

Patiño, A. E. C., Montaño, V. M. V., Buri, P. E. C., Rojas, M. E. A., & González, A. del R. C. (2024). The improvement of oral communicative competence in english through the artificial intelligence: Desarrollo de la competencia comunicativa oral en inglés mediada por la inteligencia artificial. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades*, *5*(1), 3449–3456.

Rui, Z., & Badarch, T. (2022). Research on Applications of Artificial Intelligence in Education. *American Journal of Computer Science and Technology*, *5*(2), 72. https://doi.org/10.11648/j.ajcst.20220502.17

Rukiati, E., Wicaksono, J. A., Taufan, G. T., & Suharsono, D. D. (2023). AI on Learning English: Application, Benefit, and Threat. *Journal of Language, Communication, and Tourism*, *1*(2), 32–40. https://doi.org/10.25047/jlct.v1i2.3967

Salam, M. Y., Fitri, S., & Zulan, H. (2024). Educational Technology Based on Artificial Intelligence in Supporting Distance Learning in Arabic Language Learning in Higher Education. *Journal International of Lingua and Technology*, *3*(1), 134–145. https://doi.org/10.55849/jiltech.v3i1.485

Sharadgah, T. A., & Sa'di, R. A. (2022). A Systematic Review Of Research On The Use Of Artificial Intelligence In English Language Teaching And Learning (2015-2021): What Are The Current Effects? *Journal of Information Technology Education: Research*, *21*. https://doi.org/10.28945/4999

Shi, L., Muhammad Umer, A., & Shi, Y. (2023). Utilizing AI models to optimize blended teaching effectiveness in college-level English education. *Cogent Education*, *10*(2). https://doi.org/10.1080/2331186X.2023.2282804

Silcheva, A. G., Lamzina, A. V., & Pavlova, T. L. (2023). Specifics of using text and graphical chatbots with artificial intelligence in English language teaching. *Perspektivy Nauki i Obrazovania*, *64*(4), 621–635. https://doi.org/10.32744/pse.2023.4.38

Soyombo-erdene, U. (2024). Research on the Application of Artificial Intelligence in Second Language Teaching. *International Journal of New Developments in Education*, *6*(4), 31–35. https://doi.org/10.25236/ijnde.2024.060406

Tobing, M. B., SNA, F. I., Hayrunnisa, N. R., Haswuri, N. I. T., Sutarsyah, C., & Munifatullah, F. (2023). An Exploration of Artificial Intelligence in English Language Teaching As a Foreign Language. *International Journal of Social Science and Human Research*, *06*(06), 3837–3843. https://doi.org/10.47191/ijsshr/v6-i6-78

Waluyo, B., & Kusumastuti, S. (2024). Generative AI in student English learning in Thai higher education: More engagement, better outcomes? *Social Sciences & Humanities Open*, *10*, 101146.

Wang, X., & Yan, K. (2022). College English Reading Teaching Integrating Production Oriented Approach from the Perspective of Artificial Intelligence. *Computational Intelligence and Neuroscience*, *2022*(1), 3411203.

Xu, X., Dugdale, D. M., Wei, X., & Mi, W. (2023). Leveraging Artificial Intelligence to Predict Young Learner Online Learning Engagement. *American Journal of Distance Education*, *37*(3), 185–198. https://doi.org/10.1080/08923647.2022.2044663

Zhang, X., Sun, J., & Deng, Y. (2023). Design and Application of Intelligent Classroom for English Language and Literature Based on Artificial Intelligence Technology. *Applied Artificial Intelligence*, *37*(1). https://doi.org/10.1080/08839514.2023.2216051

Zulkarnain, N. S., & Md Yunus, M. (2023). Primary Teachers' Perspectives on Using Artificial Intelligence Technology in English as a Second Language Teaching and Learning: A Systematic Review. *International Journal of Academic Research in Progressive Education and Development*, *12*(2), 812–825. https://doi.org/10.6007/ijarped/v12-i2/17119