



Transforming EFL Instruction: A Systematic Review of Chatbot Integration in English Language Learning

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ABSTRAK

Terdapat area penting yang belum diselidiki secara menyeluruh. Pemanfaatan chatbot untuk meningkatkan kemampuan belajar bahasa siswa menghadirkan berbagai keuntungan dan kendala. Penelitian ini mengkaji integrasi Chatbot dalam pengajaran bahasa Inggris bagi pembelajar EFL, dengan fokus pada dampaknya terhadap implementasi pengalaman belajar, kelebihan, dan keterbatasannya. Mengikuti standar Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), penelitian ini meninjau artikel dari tahun 2019 hingga 2024 untuk memastikan analisis yang komprehensif. Sebanyak 998 publikasi diidentifikasi melalui Google Scholar dengan kata kunci seperti "chatbot," "AI chatbot," dan "Chatbot implementation among EFL learners in English language learning." Setelah proses penyaringan yang mencakup penghapusan duplikasi serta penerapan kriteria inklusi dan eksklusi, 10 studi empiris dengan akses terbuka dipilih untuk ditinjau. Hasil penelitian menunjukkan bahwa ChatGPT secara signifikan meningkatkan kemampuan menulis, tata bahasa, dan kosakata melalui umpan balik langsung dan personal. Selain itu, alat ini mendorong keterlibatan dan motivasi siswa serta mendukung eksplorasi budaya dan kompetensi antarbudaya. Namun, terdapat keterbatasan seperti kurang efektif dalam pengembangan keterampilan berbicara dan mendengarkan, tantangan teknis, serta masalah etika. Penelitian ini menyimpulkan bahwa meskipun ChatGPT adalah alat yang bernilai, penggunaannya harus melengkapi metode pengajaran tradisional untuk memastikan pengalaman belajar yang seimbang dan efektif.

ABSTRACT

There are important areas that have not been fully investigated. The use of chatbots to improve students' language learning abilities presents various advantages and obstacles. This study explores the integration of Chatbots in English language instruction for EFL learners, focusing on their impact on learning implementation experiences, advantages, and limitations. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards, the research reviewed articles from 2019 to 2024 to ensure a comprehensive analysis. A total of 998 publications were identified through Google Scholar, with search terms such as "chatbot," "AI chatbot," and "Chatbot implementation among EFL learners in English language learning." After an extensive screening process, including duplicate removal, inclusion, and exclusion criteria, 10 empirical, open-access studies were selected for review. The findings reveal that ChatGPT significantly enhances writing, grammar, and vocabulary skills by providing immediate and personalized feedback. It also fosters engagement and motivation while supporting cultural exploration and intercultural competence. However, limitations include reduced efficacy in developing speaking and listening skills, technical challenges, and ethical concerns. The study concludes that while ChatGPT is a valuable tool, it should complement, not replace, traditional teaching methods to ensure a balanced and effective learning experience.

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1. INTRODUCTION

Artificial intelligence (AI) models are becoming increasingly popular. Various forms and configurations of AI (Artificial Intelligence) are being implemented in EFL contexts and educational levels to facilitate the teaching and learning of foreign languages in the era of IoT (Internet of Things) (Li & Mohamad, 2023; Shahroom & Hussin, 2018). AIs utilized at both the macro and micro levels in the classroom to assist students in the development of various language skills (e.g., speaking, reading, listening, and writing) are exemplified by chatbots (Putri & Sulistyaningrum, 2021; Taar & Palojoki, 2022). Chatbots, also known as chatterbots, talkbots, or bots, are computer programs that have the capacity to simulate user interactions and have the potential to improve interaction opportunities through mobile learning (Klímová & Seraj, 2023; Smutny & Schreiberova, 2020). Chatbot, as described by previous study is a tool that integrates artificial intelligence (AI), natural language processing, and other technologies to engage in text or voice-based conversations with human users (Durall Gazulla et al., 2023).

Intelligent virtual assistants, also known as human-computer dialogue systems, machine conversation systems, virtual agents, dialogue systems, chatterbots, digital assistants, or chatbots, enable communication through natural language in a dialogic manner.

Research studies suggest that the utilization of chatbots could potentially enhance the speaking proficiency of students (Okonkwo & Ade-Ibijola, 2021; Smutny & Schreiberova, 2020). It typically pertains to a dialogue system that emulates human users' written and verbal interactions, predominantly through the Internet. Respondents may utilize speech, graphics, virtual gestures, physically assisted tactual gestures, text-based or task-based dialogue systems (Al Mamun et al., 2022; Huo et al., 2020). Furthermore, their efficacy in language courses is increasing as a result of the automated responses they provide. AI chatbot tools can be employed by learners to execute subject-specific tasks, while the emphasis of education should be on cultivating learners' critical thinking and creativity as opposed to general aptitude (Kasmayanti et al., 2023; Parina et al., 2022). Incorporating AI chatbot tools into learning tasks can effectively captivate students and involve them in the resolution of practical challenges. In addition, it is imperative to establish novel formats for assessment tasks that place emphasis on fostering students' creative and critical thinking proficiencies—advice that cannot be substituted by AI chatbot tools (Klímová & Seraj, 2023; Wahyuni & Santosa, 2023).

The comprehensive impact of chatbot integration in EFL (English as a Foreign Language) instruction is the focus of a significant research gap, despite the growing interest in utilizing AI chatbots for instructional purposes. The majority of the current literature concentrates on general benefits, including personalized learning experiences and increased engagement (Wang et al., 2017; Yang, 2022). Nonetheless, there are still numerous critical areas that have not been thoroughly investigated. The utilization of chatbots to enhance the language learning abilities of students presents a variety of advantages and obstacles. Chatbots offer immediate feedback on speaking, listening, reading, and writing duties, providing interactive and personalized practice. They have the ability to replicate real-life conversations, which can improve listening comprehension and speaking fluency (Anggeraini, 2018; Yang, 2022). Additionally, they can provide personalized vocabulary and grammar exercises to enhance reading and writing abilities. These advantages contribute to a more personalized and engaging educational experience.

Nevertheless, the implementation of chatbots is not without its obstacles. The chatbot's capacity to comprehend and produce contextually appropriate responses in intricate linguistic scenarios may be impeded by technological constraints (Dinata et al., 2024; Tai & Chen, 2020). Furthermore, the efficacy of chatbots in a variety of learner demographics, such as age, proficiency levels, and cultural backgrounds, is not adequately documented. It is essential to comprehend the manner in which various groups of learners respond to chatbot-based instruction in order to optimize their utilization. By addressing these research gaps, a more comprehensive comprehension of the potential and constraints of chatbot integration in EFL instruction will be achieved, which will serve as a roadmap for the development of future educational technologies and methodologies (Durall Gazulla et al., 2023; Parina et al., 2022).

The novelty of this study impacts of implementing artificial intelligence, more precisely Chatbot AI, into English Foreign Language instruction. It examines the potential applications, advantages, and drawbacks of language learning tools propelled by Chatbot AI. The main purpose of this review is to analyze the implementation of AI Chatbot Tools in the context of English as a Foreign Language (EFL) Education. The implementation of ChatGPT in foreign language learning affect students' motivation and academic achievement. Integration of pedagogy and teacher perspectives on AI Chatbot in classroom. The potentials of implementing AI chatbot tools in EFL education. The limitations of implementing AI chatbot tools in EFL education.

2. METHOD

To investigate the integration of Chatbot in English Language Instruction for EFL learners, the researcher followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards (Page et al., 2022). The review involved selecting pertinent research articles on the subject and organizing them for a comprehensive analysis. Adhering to the PRISMA guidelines, the search was limited to a time period of the last five years, particularly from 2019 to 2024. The PRISMA principles were utilized to outline and clarify the process of schema construction, identification, and selection of the findings in the analysis of articles. This mini-review specifically focuses on the implementation of chatbots in EFL classrooms for teaching English as a foreign language.

The search was performed in reputable databases, especially Google Scholar, focusing on the titles, abstracts, and keywords of the papers. This approach ensures the selection of a dependable and appropriate set of articles for subsequent analysis. The researcher utilized the Google Scholar database to search for initial studies related to chatbots, including the keywords "chatbot," "AI chatbot," and "Chatbot implementation among EFL learners in English language learning." The author then manually filters the papers and deletes those that are regarded unnecessary after excluding the papers that have been selected. The remaining 10 publications were

chosen as research subjects. This review study exclusively included open access articles, as the authors were determined to ensure that all individuals had access to their research. In order to identify solely pertinent studies that exclusively address the specified subject matter, the subsequent inclusion and exclusion criteria were implemented. The PRISMA flowchart visually represents the process of selecting articles using inclusion and exclusion criteria as part of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology as shown in Figure 1.

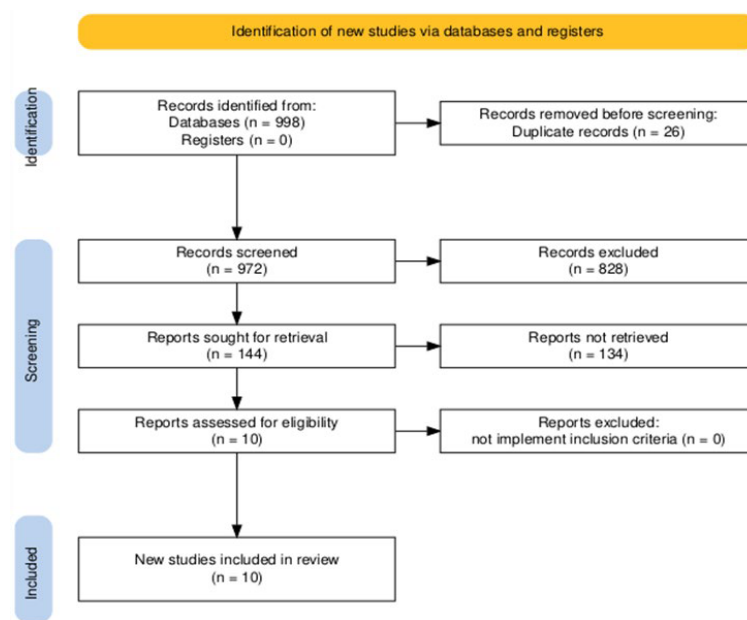


Figure 1. PRISMA Flow Diagram to Illustrate the Review Inclusion Procedure

The inclusion criteria will delineate the specific attributes that articles must contain in order to be deemed pertinent and appropriate for examination. In contrast, the exclusion criteria will specify the reasons that make publications inappropriate for the study, such as irrelevant themes, insufficient sample numbers, or insufficient methodological quality. The researchers seek to maintain the integrity and validity of the research findings by applying specific criteria to include and exclude papers, ensuring that only the most appropriate and reliable ones are included in the study.

3. RESULT AND DISCUSSION

Result

Following PRISMA standards, the search was limited to studies published between 2019 and 2024. Initially, 998 publications were retrieved. After removing 26 duplicates through Covidence, 972 papers underwent screening based on inclusion and exclusion criteria. Non-English articles, studies unrelated to technology, and those not focused on EFL learners were excluded, reducing the selection to 144 papers. Further refinement identified 134 empirical studies, and a manual review led to a final selection of 10 open-access articles that met all criteria. The PRISMA flowchart visually represents the article selection process, ensuring transparency and rigor. Inclusion criteria focused on studies explicitly addressing chatbot implementation in EFL classrooms, while exclusion criteria removed papers with irrelevant themes, small sample sizes, or weak methodologies. By applying these criteria, the study ensures the reliability and validity of its findings. Table 1 presents a summary of the selected studies based on the inclusion and exclusion criteria, highlighting key aspects such as publication year, research focus, methodology, and findings.

Table 1. The Result of New Studies Included in Review

Study	Study Purpose	Dataset	Methods/ Techniques	Relevant Finding
(Karataş et al., 2024)	To explore the Impact of Chat GPT on foreign	13 preparatory class students from the School of	Qualitative Case Study	ChatGPT improves students' learning, especially in writing,

Study	Study Purpose	Dataset	Methods/ Techniques	Relevant Finding
(Afkarin & Asmara, 2024)	language learning, addressing its potential, benefits and drawbacks. To examine how ChatGPT influences motivation and GPA among English education students	Foreign Languages at a university in Turkey. 35 seventh-semester English education students (25 ChatGPT users and 10 non-users).	Mixed methods approach— quantitative analysis	grammar, and vocabulary, while boosting motivation and engagement through its flexibility and accessibility. The study supports the idea that ChatGPT positively influences student motivation and calls for further experimental research.
(Hew et al., 2023)	Investigation of chatbot use to support student goal setting and social presence in online learning.	Participants in fully online courses using a learning buddy chatbot for listening exercises.	Qualitative approach	The study provides insights and recommendations for integrating chatbots into online teaching and learning.
(Koç, 2024)	Investigation of AI chatbot use to Enhance listening and speaking skill in Turkish EFL learners.	Turkish EFL learners	Quasi Experimental Study	Significant improvements were observed within groups in speaking proficiency but not between groups in listening and speaking post-test scores
(Shikun, Grigoryan, & Huichun, 2024)	To explore the feasibility and impact of AI chatbots in EFL learning, specifically in second language acquisition.	Chinese middle school students struggling with spoken English.	Mixed-methods approach	The study highlights chatbots' practical value in developing oral English proficiency.
(Elliott, 2024)	To explore the benefits and challenges of AI in EFL education	University-level EFL students surveyed on their experiences with AI in learning.	Qualitative research	AI enhances learning by offering personalized experiences and predictive analytics.
(Shikun, Grigoryan, Huichun, et al., 2024)	To investigate teachers' perspectives on using ChatGPT tool to support English writing in higher education	10 teachers familiar with ChatGPT.	Qualitative Case Study	This study highlights the important role of AI technologies in facilitating high-quality academic writing, offering insights into their integration in English language education.
(Waziana et al., 2024)	To investigate the types of AI chatbots	100 undergraduate EFL students	Mix method	Significant improvements reported in

Study	Study Purpose	Dataset	Methods/ Techniques	Relevant Finding
(Hobert et al., 2023)	used by EFL students in enhancing writing skills. This study aims to explore students' opinions on Chatbot effectiveness.	from five universities in Indonesia. 30 undergraduate students with 3 students for in-depth insights.	Qualitative descriptive research.	vocabulary range, syntactic variety, and overall writing quality. Chatbots have the potential to improve English learning experiences by offering convenient and accessible support.
(Kim et al., 2021)	To examine How AI chatbots influence writing proficiency, self-efficacy, among EFL students.	40 EFL students from IAIN Curup	Mixed Method	This study effectively highlights both the benefits and potential challenges of chatbot-assisted writing instruction, offering valuable insights for future EFL pedagogy.

Discussion

The use of artificial intelligence chatbots, and more specifically ChatGPT, in EFL classrooms has recently attracted a lot of interest because of the positive effects it may have on students' motivation, retention, and overall academic achievement. The use of AI-powered chatbots in language acquisition has been the subject of both positive and negative research conclusions. Language, Spelling, and Paragraph Improvements Talkbots like ChatGPT have been shown in multiple studies to significantly enhance students' vocabulary, grammar, and writing skills. Students of foreign languages benefited from ChatGPT. According to research who observed an increase in both involvement and proficiency in written expression (Karataş et al., 2024). The use of AI chatbots improved students' writing quality, syntactic variation, and vocabulary range. Teachers recognize the importance of AI in enabling high-quality academic writing in higher education. According to these results, AI chatbots are useful writing aides since they help students overcome writing obstacles and get immediate linguistic feedback (Chan, 2023; Waziana et al., 2024).

Several studies have also looked at another important aspect, how AI chatbots affect students' motivation and academic achievement. Student engagement can be enhanced by AI-driven learning, according to study who discovered that ChatGPT users had more motivation and better GPAs than non-users (Yadav & Yadav, 2024). According to chatbots made studying more enjoyable by assisting students with goal-setting and social presence (Hew et al., 2023). Chatbots' inspiring qualities imply that AI capabilities can facilitate student-initiated learning and inspire them to actively participate in language acquisition. Developing fluency in oral and auditory expression there has been clear progress for AI chatbots in writing, but the effect on their ability to listen and speak is more complex. There were no major variations in the groups' listening and speaking post-test results, however previous study discovered that Turkish EFL learners' proficiency in speaking improved significantly after using chatbots (Koç, 2024). Chatbots have been shown to be useful in helping Chinese middle school pupils improve their oral English proficiency as well (Shikun, Grigoryan, & Huichun, 2024). The results show that AI chatbots can help with language learning, but we still need to see how they stack up against more conventional methods of practicing public speaking.

Integration of pedagogy and teacher perspectives have mostly concentrated on students' perspectives on AI chatbots in the classroom, but they have also looked at teachers' views on the topic. According to previous study most professors had good things to say about Chatbot as a tool for improving students' writing (Smutny & Schreiberova, 2020). Nevertheless, there are still valid concerns about placing too much trust in AI and the necessity of establishing ethical standards to safeguard academic honesty. With an emphasis on predictive analytics and individualized learning. Other study shared these worries about AI-driven education (Hooda et al., 2022). Research like this shows that AI chatbots have potential, but it is important to think carefully about how to include them, so that human teachers and technology work together.

Beside that, there are still several limitations to implementing AI chatbots into EFL classrooms. Chatbots, according to previous study make language learning easier and more accessible, although they have limitations due to inaccuracies and technical obstacles (Kohnke, 2022). Similarly, other study highlighted obstacles that could impede students' capacity to cultivate independent writing abilities, including the dangers of plagiarism and an excessive dependence on chatbots (Karunaratne et al., 2018; Pratiwi & Sentanu, 2019). Responsible AI use and additional study on ethical AI implementation in education are necessary in light of these challenges. The Consequences for the Future Results from these research point to the potential usefulness of AI chatbots in improving English as a foreign language (EFL) classrooms, especially in the areas of writing competency, student motivation, and individualized instruction.

Further study is needed to determine how to make them work better, fixing the gaps in oral language acquisition through the creation of AI chatbots that facilitate interactive listening and speaking activities. Making sure that academics cannot be caught cheating or relying too much on AI requires the establishment of ethical standards for its use. In order to make sure that AI chatbots boost language learning outcomes in the long run, researchers are looking into their effects. When integrating AI chatbots like ChatGPT into language classrooms, it is important to keep pedagogical awareness and ethical concerns in mind so that students can learn the language in a responsible and productive way.

4. CONCLUSION

In summary, using AI chatbots, in EFL learning has shown promise in improving students' language skills, motivation, and academic success. AI tools boost writing, vocabulary, and grammar while engaging students through flexibility and accessibility, according to research. AI chatbots boost motivation and self-directed learning, improving academic performance. While AI chatbots excel at writing, their usefulness in developing speaking and listening abilities is still being studied. AI can improve speech proficiency, but its impact on real-time communication abilities needs further study. Teachers acknowledge the benefits of AI chatbots in academic writing but worry about over-reliance, ethics, and accuracy. To maximize AI chatbots' benefits in language learning, future research should improve AI capabilities in interactive speaking and listening exercises, develop ethical frameworks to regulate AI-assisted learning, and study the long-term effects of chatbot use on students' language proficiency. AI-powered chatbots like ChatGPT have immense potential to improve EFL instruction, but they must be integrated with careful consideration of pedagogical, ethical, and technical problems to enable sustainable and meaningful language learning.

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