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Generative Artificial Intelligence in Enhancing English Language Skills: A Systematic Review

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Abstract

Artificial intelligence (AI) is strengthening rapidly, and the release of ChatGPT and similar generative AI (GenAI) tools has brought about a substantial change in the conduct of education. The domain of English Language Teaching and Learning (ELT/L), amenable to technological integration, has also experienced a profound transformation in recent years when language education stakeholders began embracing the use of AI-powered applications in various facets of language pedagogy. Considering the recent advancements in artificial intelligence, this systematic literature review endeavors to explore the integration of generative AI technologies, such as AI Chatbots, AI-powered Speech Recognition Technology (AI-SRT), Machine Translation tools, Automated Evaluation Systems (AWE), and other AI applications in language education. The primary focus is to understand how these technological innovations facilitate language acquisition and enhance language skills, such as listening, speaking, reading, and writing in English as a Second Language (ESL) and English as a Foreign Language (EFL) contexts. Through scrupulously examining the existing literature, the study seeks to identify the most frequently used GenAI tools in language education and their pedagogical implications. Further, it seeks to determine the crucial language skills predominantly enhanced using AI, assess the efficacy of the tools used in their enhancement, and evaluate the impact of incorporating AI in language teaching and learning. The study comprehensively examines 55 research articles sourced from Scopus, Web of Science (WoS), Taylor & Francis, and Springer, published between December 2022 and May 2025, that highlight the significant advancements of AI as applied to language teaching and learning. The findings reveal that advanced generative AI tools can substantially transform and augment learners' language skills by offering a personalized, versatile, and dynamic learning environment. In addition, the study elucidates the limitations and challenges inherent in incorporating generative AI into language education and advocates for undertaking effective measures to optimize its inclusion. Furthermore, the study concludes by discussing avenues for future empirical studies.

Keywords: Generative AI, ChatGPT, Automated Evaluation Systems (AWE), English language teaching, AI-powered Speech Recognition Technology (AI-SRT), LSRW skills, systematic review

1. Introduction

Artificial Intelligence (AI) stands at the vanguard of all promising and transformative technological innovations of the present era. Emerging as a rule and logic-based system (Radanliev, 2024) in the 1950s, AI has undergone profound metamorphoses over the past six decades, particularly within the domains of Machine Learning (Hockly, 2023; Radanliev, 2024) and Natural Language Processing (NLP) and has given rise to generative AI, which is now revolutionizing the global landscape. Generative AI, encompassing advanced constructs such as Generative Pre-trained Transformers (GPTs) and Large Language Models (LLMs) (Floridi, 2023), refers to a sophisticated subset of AI that leverages intricate algorithms, particularly deep learning techniques, to comprehend natural language input (Werdiningsih et al., 2024) and generate novel and meaningful content across diverse modalities (Dwivedi et al., 2023; Teubner et al., 2023; Polakova & Klimova, 2024) that are on par with human cognition and creation.

The advent of ChatGPT by OpenAI and other subsequent generative models (Anders, 2023) signifies a paradigm shift across multiple sectors, including the economy, business, government, healthcare, and education. The integration of AI within educational frameworks has been lauded for its potential to enhance learning systems and redefine the academic structure. The sophisticated GenAI tools, with their exceptional command over natural language comprehension and the

capability to produce versatile content (Bates, 2022), can provide responses tailored to different domains or user subsets. The assimilation of these AI tools carries profound implications in pedagogy and instigates fundamental transformation in developing instructional methodologies (Cheng, 2024), improving student learning outcomes (Mohamed, 2023), and conducting assessments. In English language education, generative AI, underpinned by machine learning and natural language processing, stands poised to redefine pedagogical approaches and offer innovative solutions to age-old challenges (Werdiningsih et al., 2024) associated with language acquisition and proficiency. The adoption of AI-driven technologies like ChatGPT, AI-assistants, AI-SRT, and other generative AI-based applications opened new avenues in language pedagogy, empowering educators to engage students through interactive dialogues, provide real-time feedback, and generate customized educational materials (Polakova & Klimova, 2024). Implementing these technologies can significantly improve teaching methodologies, personalize student learning experiences, and automate assessment practices (Bozkurt & Sharma, 2023). Simultaneously, this adaptability not only enhances student engagement but also fosters an inclusive curriculum, a collaborative and immersive learning environment that accommodates various learning styles and proficiency levels. Further, it also improves accessibility to information (Bozkurt et al., 2023), which facilitates the easier acquisition of a language.

1.1 Significance of GenAI in the Language Curricula

Incorporating GenAI into language curricula is of paramount importance, as it offers a myriad of opportunities within the contemporary educational paradigm. According to Wang (2024), this technological integration represents a paradigm shift in the methodologies employed (Alzubi, 2024) for language teaching and learning. Integrating AI into language curricula helps educators enhance and automate educational tasks, particularly in designing teaching methodologies with high-quality and adaptive content tailored to the individual needs and proficiency levels of the learners. It further enables the development of a dynamic (Al-Khresheh, 2024) and motivating learning environment (Rad & Roohani, 2024) vital for effective language development. Further, AI can facilitate language generation and offer insights into cultural contexts, nuances, and idiomatic expressions (Zhang et al., 2023) while assisting learners in analyzing patterns and providing insights into language usage. In addition, Huang and Mizumoto, (2024) observed that the effective application of AI enhances learners' engagement with the educational materials, emphasizes learners' autonomy (Alzubi, 2024), and fosters an interactive and responsive learning atmosphere (Rad and Roohani, 2024), which can lead to positive shifts in students' perceptions of their language subtlety (Wang, 2024). Bender (2024) also emphasizes that generative AI can best enhance language skills, enabling students to attain a critical understanding of information and aesthetically engage through interactive learning activities within the curriculum. According to Zhang et al. (2023), establishing an AI-based evaluation system will streamline the evaluation process in alignment with the desired learning outcomes that traditional language teaching failed to achieve and facilitate monitoring learners' progress through the feedback loop. Finally, the utilization of AI applications in language curricula enriches the language learning experience by providing abundant opportunities for linguistic engagement (Horn, 2024), preparing students for a technology-driven world.

1.2 Purpose of the Study

As English language education increasingly adopts GenAI technologies, it is essential to evaluate the implications of AI-driven applications currently employed in language pedagogy. The primary objective of this study is to comprehensively investigate the incorporation of generative artificial intelligence (GenAI) in ESL and EFL education, with an emphasis on elucidating its impact on the enhancement of fundamental English language skills, such as listening, speaking, reading, and writing. In addition, the systematic review aims to synthesize the existing research literature that discusses the application of generative AI in ELT/L to explore and comprehend the ongoing technological advancements happening across the discipline. By analyzing the current landscape of GenAI-assisted language instruction, the study seeks to uncover research insights on the acclimatization of technological aids in contemporary pedagogical practices, with insights on the efficacy and usage frequency of diverse tools leveraged to enhance language skills, along with comprehending limitations associated with their adoption into language teaching and learning.

Hence, this systematic literature review attempts to answer the following questions:

RQ1: What are the prevalent GenAI tools employed in English language education and their pedagogical implications?

RQ2: Which among the LSRW skills are predominantly enhanced through generative AI, and what are its observed impacts in developing these skills?

RQ3. What are the perceived limitations and challenges of implementing generative AI for language learning, and how can those challenges be alleviated?

2. Research Methods

2.1 Method and the Data Sources

This systematic review undertakes a scrupulous examination of the existing literature concerning the confluence of artificial intelligence and English language teaching and learning (ELT/L) to glean insights into the application,

possibilities, efficacy, repercussions, and the future of using generative AI technology in language pedagogy, particularly for the enhancement of Language Skills. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist (Page et al., 2021) is employed to identify, select, summarize, and report the research evidence. A curated selection of 55 research articles from scholarly databases such as Scopus, Web of Science (WoS), Taylor and Francis, and Springer, published in the domain between December 2022, following the launch of ChatGPT, and May 2025, serves as the foundation of this review. Further, an in-depth analysis of the contents outlined by Fraenkel et al. (2012) is employed to identify the research questions, formulate thematic inquiry, make comparisons, and analyze observations to contribute to the existing discourse of GenAI in language education.

The following figures, Figure 1 and Figure 2, illustrate the year-wise and country-wise distribution of studies selected for the review.

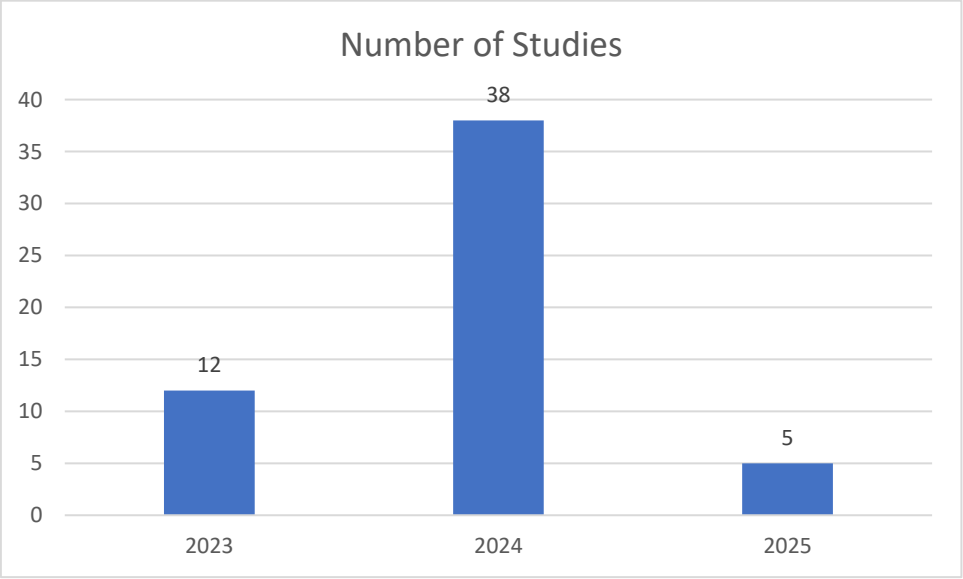

Figure 1 Year-wise distribution of studies selected for the systematic review

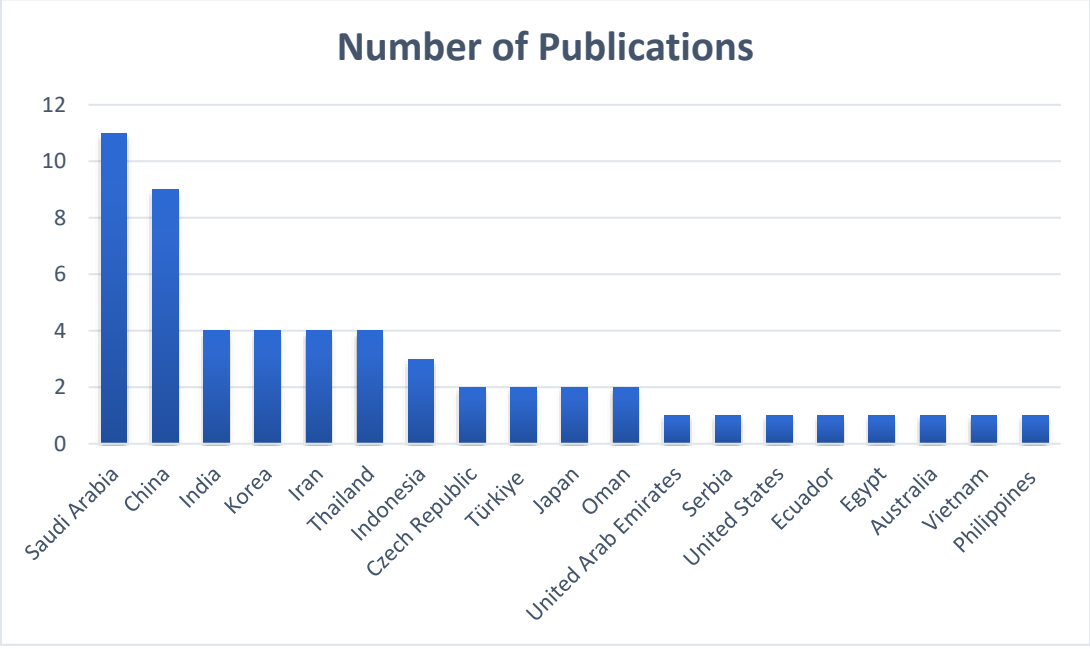

Figure 2. Country-wise distribution of the studies selected for the systematic review

2.2 Inclusion Criteria

(i) published articles from reputed databases such as SCOPUS, WoS, Springer, and Taylor and Francis, which were available as open-access

(ii) papers published from December 2022 to May 2025

(iii) articles that focus on the intersection of generative AI and ELT

(iv) papers that focus on generative AI models like chatbots, virtual assistants, speech recognition, automated evaluations, and LSRW skills and language sub-skills

2.3 Exclusion Criteria

(i) closed-access articles, early-access articles, and review articles

(ii) articles published before December 2022

(iii) papers that focus on generative AI with no focus on ELT

(iv) papers that focus on the enhancement of LSW skills using methods other than AI-integrated instruction

(v) non-English publications

2.4 Boolean Search String Applied for Article Search

("Generative AI" OR "chatbots" OR "voice assistants" OR "conversational assistants" OR "intelligent tutoring systems" OR "automatic speech recognition technology" OR "automated writing evaluation systems" OR "AI-based language learning applications" OR "ChatGPT" OR "text-to-speech language translation applications") AND (" English language teaching" OR "learning" OR "assessment") AND ("English language skills" OR "listening skills" OR "speaking skills" OR "reading skills" OR "writing skills") AND ("second language learners" OR "foreign language" OR "L2 learners"

2.5 The Article Selection Process

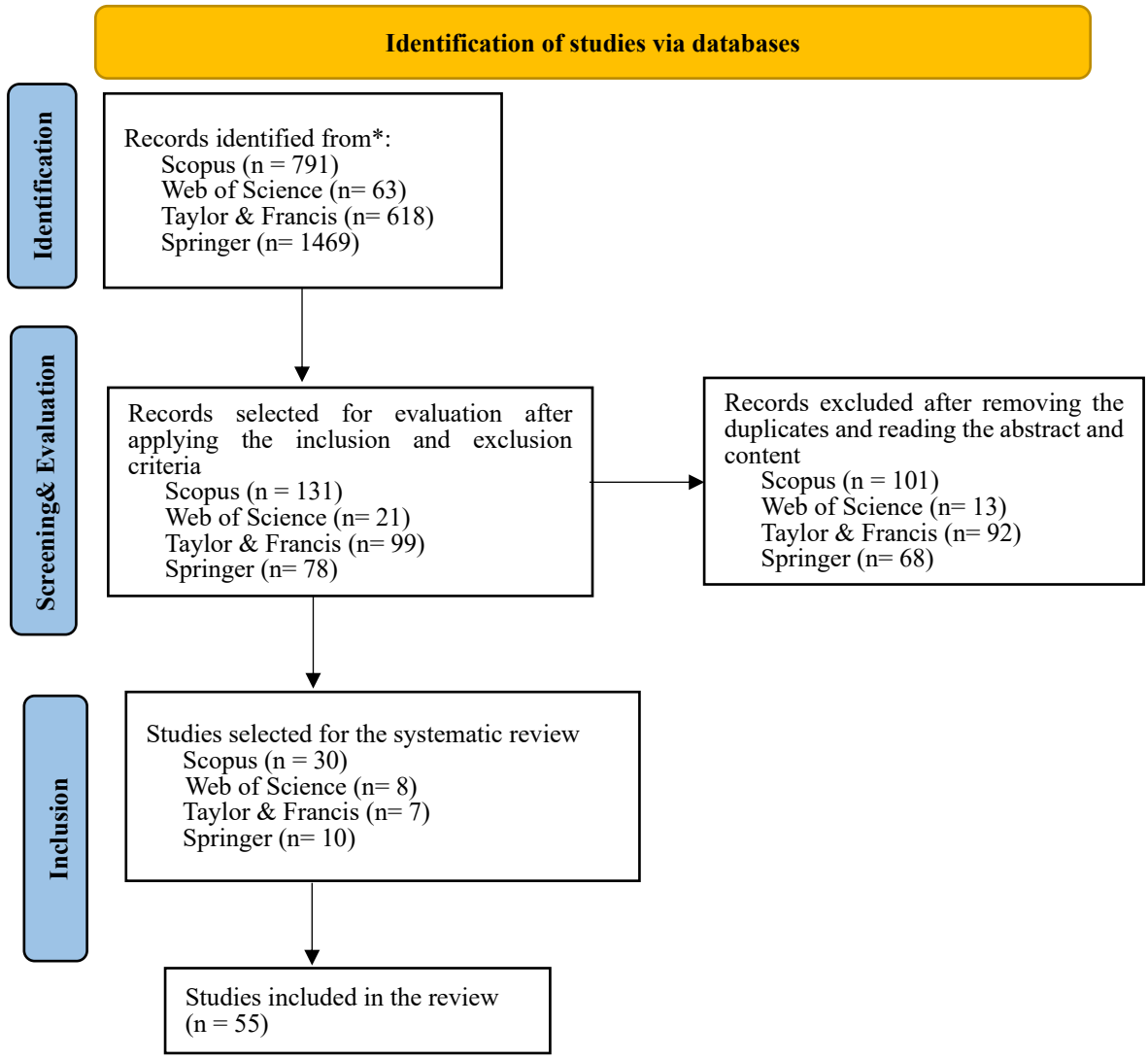

Figure 3. Prisma flow diagram demonstrating the selection of articles

Source: Own elaboration following the PRISMA 2020 (Page et al., 2021) flow diagram template.

3. Findings & Discussion

3.1 Review Question 1: Frequently Used Generative AI Models in English Language Education and Their Pedagogical Implications

Reflecting the trend toward technology integration in education, language instructors have shown keen interest in amalgamating generative AI tools within the pedagogical frameworks of English language teaching (Marzuki, Widiati et al., 2023; Mahmud, 2023). As a result, AI Chatbots like ChatGPT, AI-powered Speech Recognition Technology (AI-SRT), Machine Translation Tools, Automated Writing Evaluations (AWE) Systems (Yang et al., 2023), and other AI-driven Applications (Rad & Roohani, 2024) emerged as the prominent AI technologies utilized in ESL and EFL language teaching and learning environments for the development of LSRW skills.

3.1.1 ChatGPT and AI Chatbots

ChatGPT, with its text-processing and natural language comprehension capabilities (Alrajhi, 2024; Karataş et al, 2024) emerged as the most prominently used generative AI model in the realm of language pedagogy. With its ability to enhance differentiated instruction and facilitate personalized and process-oriented learning (Yan, 2023; Huang & Mizumoto,2024), ChatGPT has now reshaped the current teaching methodologies. ChatGPT adeptly responds to learners' queries meaningfully by understanding their language proficiency level and offers a dynamic learning environment where they can collaborate to compose text with AI (Algraini, 2024, Bender, 2024), and receive instantaneous and constructive feedback (Polakova & Ivenz, 2024; Huang & Mizumoto,2024; Kurt &Kurt, 2024) extensively throughout the learning process. One of the profound impacts of employing it in language learning lies in its ability to foster student engagement by providing them with real-life conversational scenarios (Cheng, 2024), tailored content, and a constructive atmosphere to experiment with language (Huang & Mizumoto,2024). It also cultivates in learners a sense of agency (Huang & Mizumoto,2024; Tsai et. al, 2024) and fosters self-directed language learning (Polakova & Ivenz, 2024; Chiu, 2024) while reinforcing the understanding of language structures (Tica & Krsmanović, 2024) and mechanics (Cheng, 2024). On a similar note, it assists educators in designing curricula, generating adaptive content, including lesson plans and interactive exercises (Tafazoli, 2024; Dehghani & Mashhadi, 2024), and assists them in conducting assessments (Dehghani & Mashhadi, 2024) that capture the nuances (Yan; 2023) of student learning outside the traditional classroom hours.

AI chatbots also serve as effective tools for developing language skills. The advantage of employing chatbots in language teaching is that they create a non-threatening environment (Algraini, 2024; Polakova & Klimova, 2024) for the learners to practice language skills. This allows individuals to engage with language materials at their own pace (Behforouz & Al Ghaithi, 2024), fostering a sense of autonomy and emphasizing a learner-centered approach (Behforouz & Al Ghaithi, 2024). As highlighted by Behforouz & Al Ghaithi (2024), the use of generative AI-based chatbots alleviates the learner's anxiety associated with language learning and engaging in face-to-face interactions (Polakova & Klimova, 2024) and helps in reducing the transactional distance (Behforouz & Al Ghaithi, 2024) between language learners and instructors. As shown in recent studies, chatbots serve as interactive tools (Wiboolyasarin et al., 2024), positively influencing (Núñez-Naranjo et al., 2024) the learning outcomes of the learners (Mohamed, 2023). Also, it has been considered a tool that could revolutionize language assessment (Li et al., 2024) by providing unlimited opportunities for language exposure and practice. Furthermore, research indicates that chatbots help students understand and apply different registers (Li et al., 2024) appropriate to various situations. By providing a conversational interface, it also reduces unnecessary cognitive loads (Li et al., 2024) leading to better task completion and self-management.

3.1.2 Automated Writing Evaluations (AWE) Systems

Automated evaluation and feedback systems have also become an integral part of modern language pedagogy (Yang et al., 2023). Pigai is the most prominent AI-programmed Automated Writing Evaluation (AWE) system used in assessing language proficiency (Yang et al., 2023). In addition to Pigai, other notable AWE tools such as Grammarly, Criterion, Quillbot, and Wordtune (Kao & Reynolds, 2024; Lee & Davis, 2024; NM, Kumar, 202; Alzubi, 2024) are also considered to have a significant impact on the writing proficiency development of the students. As highlighted in the research conducted by Kao & Reynolds (2024), AWE tools have garnered attention for their potential to assess the language proficiency of a learner. In L2 writing contexts, automated scoring capability AWE enhances the efficiency and effectiveness of feedback mechanisms making it beneficial for educators to provide immediate and corrective feedback (Yang et al., 2023; Kao & Reynolds, 2024). Furthermore, these tools allow educators to make accurate predictions of student performance, analyze grading patterns, and improve the decision-making process (Lee & Davis, 2024; Kao & Reynolds, 2024) associated with evaluating English language skills. On the contrary, it promotes learner autonomy, Self-directed learning (SDL), and self-assessment (Kao & Reynolds, 2024) which is important for mastering the English language.

3.1.3 AI-powered Speech Recognition Technology (AI-SRT), AI-driven Applications and Machine Translation Tools

Google Assistant (GA), Siri, and Alexa exemplify the most significantly used AI assistants (NM, Kumar, 2023) in

augmenting classroom instruction and improving overall language skills. The versatility of these tools supports various facets of language learning (Alzubi, 2024). For instance, these tools provide instantaneous feedback (Alzubi, 2024; Lee& Davis, 2024), exposure to authentic linguistic contexts, and promote learner autonomy (Dennis, 2024) by allowing them to practice language skills beyond the confines of the classroom. These tools also provide learners with a less intimidating, safe, and conducive learning environment (Algraini, 2024), which would facilitate language acquisition outcomes. Further, the tools hold the potential to accommodate advanced learner demographics (Dennis, 2024) while offering access to effective language learning resources. As highlighted by Alrajhi (2024), incorporating GA into the language curricula empowers students to set personalized learning goals, tailor interaction based on individual preferences, and self-access learning. Furthermore, Dennis (2024) states that integrating AI-SRT enhances communicative competence by bridging the gap between learners and native speakers, which traditional classrooms struggled to achieve.

In the realm of EFL, Google Translate and DeepL are the most prominent machine translation tools used to enhance language acquisition (Wang, 2024). Google Translate is widely used for translating unfamiliar words and phrases, whereas DeepL is used for deciphering complex texts (Wang, 2024). Both applications play a significant role in the language learning process (Wang, 2024), fostering the learners to move from rote learning to a more meaningful interaction with the linguistic elements (Wang, 2024). In addition, AI Avatars (Lee & Davis, 2024) and AI-based applications like ELSA Speak App, Andy- English Speaking Bot (Duong & Suppasetseree, 2024; Rad & Roohani, 2024), and Duolingo (Phanwiriyarat et al, 2025) are also used in language teaching (Lee & Davis, 2024) to provide learners with personalized learning experiences. The most exhilarating part of teaching and learning with AI-based applications is that they provide repetitive practice, instant feedback, a low-anxiety learning environment, and customized recommendations (Alrajhi, 2024). This approach increases motivation (Lee & Davis, 2024) and promotes long-term memory retention.

3.2 Review Question 2: Observed Impact of Integrating Generative AI Tools in developing LSRW Skills and the Skills Addressed the Most

Generative AI, with its ability to optimize educational tasks, has now become the cornerstone of language teaching. The observed impacts of integrating generative AI into language learning are multi-dimensional. Integrating AI in language education is considered the most promising method for mastering LSRW skills (Jamshed et. al, 2024) as it contributes to increased motivation (Horn, 2024), cognitive engagement, and collaborative problem-solving (Alnasib & Alharbi, 2024). GenAI provides L2 learners with opportunities to acquire, practice, and refine English language skills (Mohamed & Alian, 2023), based on their current language proficiency levels, needs, and interests (Rad & Roohani, 2024). Notably, among the four crucial language skills, the profound impact of generative AI tools has been observed in developing writing skills.

Writing is essential for language learning because it is through writing that learners learn to efficiently structure their thoughts (Mohamed & Alian, 2023; Tsai et. al, 2024). Research indicates that AI-driven writing assistants such as ChatGPT, Grammarly, Pigai, and other AWEs facilitate substantial improvements in writing, particularly with grammar, coherence, and sentence structure (Karataş et al, 2024; Polakova & Ivnez, 2024) by providing immediate feedback (Dennis, 2024; Tafazoli, 2024; Wang, 2024) on word usage and fluency (Alnasib & Alharbi, 2024). In addition, the incorporation of these tools in writing instruction provides an iterative writing experience (Yan, 2023) for the learners, enabling them to critically engage with the text and understand the language mechanics (Horn, 2024). As a result, learners can improve writing accuracy (Meniado, 2024), syntactic complexity (Yan, 2023), and vocabulary diversity (Kao & Reynolds, 2024; El-Esery, 2025), which are essential components of writing. Furthermore, in the observation of Mahmud (2023), GenAI incorporated writing practice will enhance communication skills, critical thinking, and self-assessment capabilities (Wang, 2024; Marzuki, Widiati et al., 2023), which are significant aspects of language proficiency.

Speaking is another key skill enhanced through GenAI integration. When considering the development of L2 speaking with generative AI, research specifies that learners who engage with AI-mediated interactions using AI-SRT, Machine Translation, and AI voice assistants (Madhavi et al., 2023) have significantly improved oral proficiency (Alrajhi, 2024, Taeza, 2025). In addition, Horn (2024) found that students who used ChatGPT and chatbots for autonomous learning easily overcame speaking difficulties and surpassed their peers in speaking skill development. The conversational capabilities of AI-driven avatars and bots (Lee & Davis, 2024) are also significant in providing extensive opportunities for learners (Yan, 2024) to practice their speaking in simulated and non-judgmental contexts. This interaction reduces anxiety and addresses problems associated with pronunciation, fluency, and conversational strategies (Yan, 2024; Taeza, 2025). On a similar note, Wang (2024) identified that AI chatbots can provide a safe space for learners to engage in simulated dialogues to foster fluency and improve vocabulary. It can also provide personalized feedback on pronunciation, grammar, and vocabulary (Rad and Roohani, 2024; Farooqi, 2025) during learning sessions by acting as teaching assistants, tutors, or peers. Besides this, EAP TALK (Wang et al., 2023) represents another innovative AI system used for evaluating the spoken English proficiency of students. This system focuses on the study requirements of the learners and uses speech recognition technology with deep learning algorithms to evaluate their pronunciation, fluency, and proficiency.

It uses an automatic scoring framework based on established criteria (Wang et al., 2023) and serves as the best aid for teachers to incorporate into language classrooms.

When the primary focus of GenAI has been on writing, it also supports the development of reading and listening skills. AI, with its capability to generate a diverse range of curated content, allows learners to critically engage with authentic resources (Alzubi, 2024) across genres, widening their reading exposure to enhance comprehension abilities and analytical skills (Behforouz & Al Ghaithi, 2024). Studies indicate that students who use AI for reading develop a nuanced understanding of language (Bender, 2024; Dehghani & Mashadi, 2024) as these tools offer translations and explanations of difficult vocabulary.

In the realm of listening, research suggests that the dialogic nature of AI-ASR can improve listening comprehension by providing learners with interactive listening activities where they can listen to audio versions of written text (Wang, 2024; Xiao, 2025). AI-driven platforms like ELSA (Dhivya et al., 2023) provide authentic linguistic input featuring different (Dennis, 2024; Xiao, 2025) accents and speech patterns and aid the learners in improving auditory processing skills by better understanding pronunciation and intonation. In addition, studies also indicate that chatbots enhance learners' interaction, motivation, and willingness to communicate through level-specific dialogue generation (Lee & Lim, 2023; Mohamed & Alian, 2023) while improving their pronunciation, sentence structure, and conversational skills.

Besides that, AI conversational assistants are found to be instrumental in enhancing language sub-skills. It enables students to view, edit, and practice language constructs to learn grammatical structures, pronunciation, vocabulary, word stress, intonation, and fluency (Duong & Suppasetseree, 2024). Furthermore, conversational assistants are proven to enhance the components of English communication like phonetic utterance, lexicon usage, grammar skills, and digital literacy (Dhivya et. al, 2023) while also focusing on comprehending word keying, word clusters, and explaining rules for constructing accurate and meaningful sentences.

3.3 Review Question 3: Perceived Limitations and Challenges of Implementing Generative AI for Language Learning and the Ways to Mitigate These Challenges

Generative AI has garnered significant attention in English language teaching by offering adaptive learning pathways and autonomous learning with better resources and non-judgmental teaching-learning opportunities. However, despite their potential benefits, these technologies have notable limitations that demand careful consideration by language education stakeholders in academia. One primary drawback that raises concern is the increased dependence (Al-Alami, 2024) on AI for academic writing. Studies (Al-Alami, 2024; Wang, 2024), observed that overreliance on generative AI like ChatGPT, Gemini, and other subsequent versions could lead learners to develop a superficial understanding of language components like sentence structure and punctuation, further leading to homogenization of writing styles (Chaoran Wang, 2024) that would impede the development (Lee et. al, 2024) of proper writing skills. Moreover, excessive dependence on technology can potentially undermine the importance of face-to-face communication, high-order thinking, and interpersonal skills (Núñez-Naranjo et al, 2024; Alrajhi, 2024), which are essential for equipping learners to effectively thrive in a progressively digital era.

The inadequacy of generative AI in addressing all the needs of learners and the concerns regarding the reliability and consistency of AI-generated resources (Tica & Krsmanović, 2024; Yan, 2024; Huang & Mizumoto, 2024) further complicates its role in language education. Research indicated that growing reliance on AI and its unregulated integration into current pedagogy (Yan 2024) complicated learners' understanding of academic integrity. It further blurred the boundaries between academic assistance and dishonesty (Wang, 2024), making it challenging for educators to differentiate between AI-generated and genuine submissions (Bender, 2024) made by students.

Repetitive and mechanistic responses provided by chat and voice-based chatbots are also considered a drawback that detracts the learners from fully engaging with the educational content (Polakova & Klimova, 2024). Voice recognition inaccuracies (Alrajhi, 2024; Al-Khresheh, 2024; Duong & Suppasetseree, 2024) in speech-based AI systems can also disrupt the learning process and hinder students' exposure to more advanced language structures and concepts essential for language development (Alnasib and Alharbi, 2024; Alrajhi, 2024). These systems, with their limited capacity, can detect sentences only up to a certain extent and when used for extended conversations, can express indifference to inaccurate language forms (Du & Daniel, 2024) and contextual and cultural nuances (Werdiningsih et al, 2024; Wang, 2024). AI can hallucinate (Alrajhi, 2024) and provide sporadic responses (Bender, 2024) and fabricated citations (Cheng, 2024) that appear plausible to the users. In addition, AI can exhibit algorithmic biases (Tafazoli, 2024) or misinformation based on the trained data, potentially reinforcing stereotypes, or single-sided perspectives (Werdiningsih et al., 2024).

When AI can provide immediate feedback, it often falls short in incorporating emotional considerations and nuanced guidance (Ching HO, 2024; Alnasib & Alharbi, 2024) that a human educator could offer in their feedback. The quality of feedback (Ching HO, 2024) may also fluctuate based on the AI model, and generalized feedback may not cater to the individual learner's requirements. In addition, the generative models heavily rely on the quality of the prompt issued by

the user while providing feedback (Kurt & Kurt, 2024). Hence, inadequately constructed questions can lead to suboptimal feedback from AI (Kurt & Kurt, 2024), signifying another limitation.

To address these limitations and for the successful integration of AI, educators and institutions must adopt proactive measures. For orienting educators to understand the pedagogical advantages (Mahapatra, 2024) and to keep them informed about the latest advancements in AI tools, digital literacy, data privacy, and other aspects of AI, robust professional development programs are a necessity. Additionally, collaboration with Edtech and industrial experts (Alrajhi, 2024; Mahapatra, 2024) is crucial to impart the necessary knowledge to educators for the successful implementation of these tools. Moreover, a critical reassessment of current methodologies is urgently required (Wang, 2024), alongside a careful consideration of training to understand the ethical implications (Mahapatra, 2024) and for harnessing the full potential of AI in language education. Furthermore, educating learners and teachers about AI literacy (Mohamed, 2023), the trends, and best practices (Lee et. al, 2024) will be effective in maximizing the benefits of AI.

4. Conclusion

The systematic literature review examined the application and impact of generative AI tools in the realm of English language teaching, particularly for the development of language skills. The evidence from the existing research indicates that integrating GenAI into pedagogical frameworks has an invariable impact on language acquisition, offering both unparalleled opportunities and challenges. The findings elucidate that generative AI-driven applications and teaching assistants offer new prospects and opportunities for language teaching and learning with their potential to enhance teaching methodologies, provide personalized and self-directed learning, automate language assessment, and enhance learning outcomes. These tools also improve the process of language acquisition by facilitating authentic conversational practice, by providing a simulated environment that closely mirrors the target language situation. Hence, the strategic disposition of GenAI tools in language education is the best method for improving learners' language skills.

However, there is a lack of conclusive evidence on the best practical strategies for incorporating GenAI tools for English language teaching. As the equilibrium between human instruction and AI-driven support becomes increasingly intricate, there is a need for systematic planning, validation, structured instructional design, and a balanced approach for the judicious selection and deployment of generative AI applications into language education curricula. It is also imperative to make learners, educators, and policymakers aware of the issues concerning data privacy and security, algorithmic biases, and ethical implications for thoughtfully integrating generative AI to facilitate language learning and attain desired educational outcomes.

5. Scope for Further Research

Future research could explore broader demographic studies examining the effectiveness of various generative AI-driven applications across diverse educational and cultural contexts. As the existing studies use short-term interventions, there is also a need for quantitative studies to investigate the long-term impacts of GenAI usage on language acquisition, cognitive skills, and learners' autonomy. Additionally, comparative research to understand the efficacy of multiple AI tools on one specific language skill and studies comparing the effectiveness of AI-generated and human feedback on maximizing learning outcomes are other possible research aspects. Researchers could also consider focusing on language skills beyond writing and speaking, and explore the feature of designing a balanced curriculum leveraging AI to enhance language skills. The complexities associated with self-directed language learning with GenAI and issues related to AI literacy also require closer examination.

6. Abbreviations

AI – Artificial Intelligence

GenAI- Generative Artificial Intelligence

LSRW- Listening, Speaking, Reading, and Writing

ELT/L- English Language Teaching and Learning

ESL- English as a Second Language

EFL- English as a Foreign Language

AWE- Automated Writing Evaluation

L2- Second Language

AI-SRT- Artificial intelligence-powered Speech Recognition Technology

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Not Applicable.

Authors contributions

The first author has written the manuscript by collecting, analyzing, and organizing the research evidence. The corresponding author reviewed and edited the research paper.

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The authors declare no conflict of interest throughout the study.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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