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Harnessing Artificial Intelligence to Enhance Speaking Confidence in EFL Learners with Limited Opportunities for Real-World Practice: A Review and Recommendations

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Abstract

Background and Aims: One of the biggest challenges for EFL learners in non-English-speaking countries is the lack of real-world opportunities to practice conversational skills. Traditional teaching methods often fall short in addressing this gap. AI-powered Intelligent Personal Assistants (IPAs) present a potential solution by offering interactive, on-demand conversations that simulate real-life exchanges. Over the past decades, extensive research has explored the impact of AI-powered tools on second language acquisition. This article specifically examines the potential of AI-driven technologies to enhance oral proficiency in language learners. Additionally, it presents strategic recommendations for implementing AI in language instruction, focusing on fostering learner engagement and improving speaking skills. This article explores how AI-driven tools can be useful for helping EFL learners to improve their communication skills, build confidence, and stay engaged in the learning process.

Methodology: This review employs a qualitative synthesis of peer-reviewed literature, analyzing empirical studies, theoretical frameworks, and recent advancements in AI-driven EFL learning. The focus is solely on using AI to enhance speaking confidence in EFL learners. Issues related to other aspects of language learning are not discussed. The sources were selected based on relevance, methodological rigor, and contribution to understanding AI's impact on speaking proficiency, engagement, and learner confidence.

Results: This article examines the impact of AI-driven tools on EFL learning, focusing on their potential to enhance communicative competence, reduce language anxiety, and increase learner engagement. Findings suggest that IPA applications can serve as valuable supplementary tools, fostering situational interest and improving confidence in spoken English. However, limitations remain. The novelty effect may lead to short-term engagement without sustained personal interest. AI-generated responses often lack variety, contextual sensitivity, and cultural nuance, which collectively have the potential to hinder authentic communication. Additionally, overreliance on AI tools may reduce meaningful human interaction, limiting social learning benefits. Privacy concerns also arise when users share personal information through these platforms.

Conclusion: AI could potentially enrich EFL learning, but it should be used in addition rather than as a replacement for human instruction. This article suggests that AI works best when integrated into structured role-playing exercises guided by educators to ensure that learners get engaged in meaningful interactions. Teachers are to play a crucial role in scaffolding AI-assisted learning, helping students apply their skills

in real-world contexts and sustain long-term engagement. Educators can create dynamic learning environments that balance technology with human interaction by thoughtfully incorporating AI, ultimately enhancing communication skills and language proficiency.

Keywords: AI-powered applications; Chatbots; English speaking development; Factors enhancing EFL speaking skills; Responsible AI Integration

Introduction

Many English as a Foreign Language (EFL) learners in countries such as Thailand face significant challenges in developing their spoken English proficiency due to limited opportunities for real-life language practice. While formal education provides structured instruction in grammar and vocabulary, the absence of immersive environments where learners can engage in authentic conversations hinders their ability to develop fluency and confidence. This lack of exposure often results in communication anxiety and reluctance to use English outside the classroom. However, the rapid advancements in Artificial Intelligence (AI) present new possibilities for bridging this gap. This article aims to explore the chances and drawbacks this technological development can offer for educators and learners.

The world has entered the Fourth Industrial Revolution (IR 4.0), a period of rapid technological transformation currently reshaping industries, governance, and education (Schwab, K., & Davis, N., 2018). IR 4.0 is characterized by the convergence of physical, digital, and biological systems, leading to innovations that could fundamentally alter traditional learning environments (N., M. (2022). In response, Education 4.0 has emerged, advocating for the integration of smart learning environments, innovative teaching methods, and personalized instruction to prepare students for an AI-driven future (Mansor et al., 2020). UNESCO (2023) encourages educational institutions worldwide to embrace these changes, emphasizing the need for technology-enhanced pedagogies.

Artificial intelligence (AI) plays a central role in Education 4.0, with AI-powered tools already being used in classrooms to support various aspects of learning (Patty, 2024). One promising application is the use of AI-driven Intelligent Personal Assistants (IPAs) and chatbots to facilitate language learning. ESL (English as a Second Language) learners, particularly those in non-native English-speaking environments, often struggle to gain sufficient real-world conversational practice. AI chatbots offer a potential solution by providing interactive, on-demand opportunities for spoken language engagement.

AI-powered conversational agents have evolved significantly over the decades. Early chatbots such as ELIZA (1966) were limited to simple pattern recognition and scripted responses (Ciesla, 2024). Modern AI-driven chatbots, in contrast, leverage vast data repositories and advanced machine learning models to produce more contextually appropriate, dynamic conversations (Mabuan, 2024). These advancements align with the growing demand for tools that can offer ESL learners a more immersive and adaptive language-learning experience.

AI chatbots present challenges despite their potential, including the risk of superficial engagement (the novelty effect), repetitive and predictable output, and the absence of genuine human interaction. Ethical concerns, such as data privacy and the reliance on AI over traditional social learning, are also issues that warrant careful consideration. While existing literature is abundant in the field of AI's general role in education, what is generally lacking is insight into its specific impact on ESL learners' speaking confidence. In this article I will attempt to fill this void.

While AI-driven chatbots offer promising solutions for ESL learners, their implementation raises critical ethical concerns that must be addressed to ensure responsible and effective use. Data privacy is a significant issue, as AI chatbots often require access to personal data, including voice recordings, text inputs, and user interaction patterns, to provide tailored learning experiences. Without strict data protection measures, there is a risk of unauthorized data collection, potential breaches, and misuse of sensitive information (Floridi & Cowls, 2022).

Additionally, the over-reliance on AI in language learning could lead to diminished human interaction, a crucial component of language acquisition. If students primarily engage with AI-driven tools rather than real-world speakers, they may develop an artificial sense of fluency that does not translate well into natural conversations (Selwyn, 2023). Furthermore, excessive dependence on AI may reduce learners' ability to adapt to diverse linguistic and cultural contexts, limiting the development of essential communication skills. These ethical concerns underscore the importance of critically evaluating AI's role in language education to ensure that the benefits outweigh the risks.

In this study, I will explore how AI-driven chatbots can enhance ESL learners' oral proficiency and confidence while mitigating potential drawbacks. This paper seeks to inform educators and policymakers about effective strategies for leveraging AI in language education by analyzing research on various AI-assisted learning interventions and offering suggestions on ways to harvest the opportunities for enhancing speaking ability while mitigating the drawbacks. Through this exploration, the study contributes to the ongoing conversation about the role of AI in shaping future-ready language learning methodologies.

Objectives

This study examines the role of AI in enhancing ESL learners' oral proficiency, focusing on fluency, pronunciation, and conversational skills. It explores AI's potential to reduce speaking anxiety by providing a low-pressure practice environment and assesses its impact on learner engagement and motivation. Additionally, the study identifies key limitations and ethical concerns, such as repetitive outputs, cultural misunderstandings, and privacy risks. Finally, it offers pedagogical strategies for effectively integrating AI into ESL instruction while ensuring a balanced, human-centered learning experience.

English as a Foreign Language (EFL) learners in many countries face limited opportunities for real-world language practice outside the classroom (Bhattarachaiyakorn, 2023; Boonkit, 2010; Rahmat, 2021). Traditional language instruction often prioritizes grammar, vocabulary, phonetics, reading, writing, and listening skills, yet many learners struggle with oral communication and confidence in spontaneous conversation. While schools and parents seek alternative solutions—such as hiring native English teachers, enrolling in additional classes, or arranging student exchange programs—these methods can be costly and inaccessible to many learners.

Recent advancements in artificial intelligence (AI), particularly AI-driven chatbots and Intelligent Personal Assistants (IPAs), offer a potential supplementary tool to address these challenges (Fryer, 2017). However, while research has explored AI's applications in language learning, there remains a gap in understanding its specific impact on improving ESL learners' speaking confidence, reducing anxiety, and sustaining long-term engagement.

This study aims to investigate the role of AI-driven chatbots in enhancing speaking confidence among ESL learners by addressing the following objectives:

- Evaluate AI's Effectiveness in Enhancing Oral Proficiency – Examine whether AI-powered chatbots can help ESL learners improve their fluency, pronunciation, and ability to engage in natural conve-

rsations.

- Assess AI's Role in Reducing Speaking Anxiety – Determine whether AI interaction provides a low-stakes, pressure-free environment that encourages hesitant learners to practice speaking.
- Analyze AI's Impact on Engagement and Motivation – Investigate whether AI tools stimulate learner interest and sustain long-term engagement in language practice beyond the novelty effect.
- Identify Key Limitations and Ethical Considerations – Explore potential drawbacks of AI-driven language learning, including repetitive outputs, cultural misunderstandings, reduced human interaction, and privacy concerns.
- Develop Pedagogical Strategies for AI Integration – Provide recommendations for educators for effectively incorporating AI tools into ESL instruction while maintaining a balanced and human-centered learning experience.

By addressing these objectives, this article aims to contribute to the growing body of research on AI-enhanced language learning, offering practical insights for educators, policymakers, and learners navigating the evolving landscape of ESL education.

Literature Review

1. Introduction to AI in Language Learning

Artificial Intelligence (AI) has increasingly become a key tool in English as a Second Language (ESL) education, offering various applications that enhance speaking proficiency, engagement, and learner confidence. The integration of AI-powered chatbots and Intelligent Personal Assistants (IPAs) in language learning has evolved significantly, from early rule-based systems like ELIZA to modern neural network-driven models such as ChatGPT. While most comparable studies focus on various aspects of language learning, this literature review specifically investigates the role of AI tools in ESL education. It examines their effectiveness in enhancing communicative abilities, alleviating speaker anxiety, and maintaining learner engagement. Additionally, the review explores the limitations and ethical considerations of AI in language learning, thereby providing a critical analysis of gaps in the existing research.

2. Positive Aspects of AI in ESL Learning

2.1 Improving ESL Communicative Abilities

Research has consistently shown that AI-driven tools do have the potential to enhance ESL learners' communicative skills. The potential use of Google Assistant (GA), for example, has been widely studied for its impact on speaking proficiency. Students reported that GA helped them develop more effective communication and listening skills, increasing their motivation to improve vocabulary, pronunciation, and fluency (N & Kumar, 2022). Similarly, N., M. (2022) observed how GA fosters an independent learning environment by utilizing speech recognition features that appear to encourage active participation in conversations.

Studies conducted before GA's widespread adoption also found similar benefits. Haristiani (2019) concluded that the use of chatbots can be useful for providing students with exposure to diverse linguistic structures and vocabulary that they might not encounter in conventional classroom settings. More recently, a library-based meta-analysis of various IPA applications found that AI-powered interactive learning fosters self-confidence, enhances motivation, and supports authentic conversational practice (Patty, 2024). Underwood (2017) further highlighted that ESL learners using Amazon's Alexa, Apple's Siri, and Google

Voice Search in group work demonstrated an increased willingness to reformulate sentences, self-correct, and persist in speaking English playfully and engagingly.

Among the most recent advancements, ChatGPT has emerged as a powerful AI tool for language learning. Research has found that ChatGPT provides ESL learners with immersive and interactive language experiences, offering real-time responses that simulate human-like conversation (Meniado, 2023). Moreover, ChatGPT's accessibility—regardless of location or schedule—expands language exposure opportunities, enabling students to engage in reading, writing, listening, and speaking exercises beyond the classroom (Jusay & Patty, 2024; Shaik et al., 2023). Zou et al. (2023) further emphasize that AI-assisted learning fosters student interaction with both instructors and peers, serving as a strong motivator for oral practice.

2.2 Reducing Speaker Anxiety and Building Confidence

Speaking anxiety is a major challenge for ESL learners, often acting as a barrier to effective communication (Bhattarachaiyakorn & Phettakua, 2023). Many students report experiencing a mental block when speaking English due to fear of making mistakes, grammatical errors, or pronunciation issues (Rahmat et al., 2021). AI chatbots, however, offer a non-judgmental, pressure-free environment where students can practice speaking without fear of embarrassment (Dizon, 2017; El Shazly, 2021; Fryer et al., 2017).

AI's effectiveness in anxiety reduction is particularly evident in role-playing scenarios. Studies suggest that chatbots can assume various roles in simulated conversations, allowing students to practice English in diverse contexts (Peachey, 2023). This adaptability fosters a safe space for language experimentation, increasing students' willingness to communicate (Seo et al., 2021). Moreover, research has found that IPA anonymity enables learners to express themselves more freely, as they are less self-conscious about making mistakes (Bibauw et al., 2019; Patty, 2024).

N., M. (2022) observed a remarkable 77.68% reduction in students' speaking anxiety when using Google Assistant. Similarly, research by Bhattarachaiyakorn et al. (2023) emphasized that AI chatbots encourage spontaneous communication, promoting fluency over linguistic perfection. Findings by Haristiani (2019) also indicate that students appear to feel more at ease speaking to AI than to human interlocutors, reducing nervousness and increasing participation.

Despite these advantages, some limitations remain. While AI tools can facilitate pronunciation practice, certain IPAs have been reported to struggle with accent recognition, particularly Amazon's Alexa (Dizon, 2017). However, these challenges can also be seen as opportunities for students to refine their pronunciation and enhance their comprehension in English-speaking contexts.

2.3 Stimulating and Sustaining Learner Interest

The introduction of new technology in education often generates excitement and curiosity among students. Research consistently demonstrates that AI chatbots capture learners' interest, contributing to heightened engagement in language learning activities (Salas, Xiao, & Oshima, 2022; Haristiani, 2019; Patty, 2024). However, a critical challenge is sustaining long-term interest beyond the initial novelty effect.

Hidi and Renninger's (2006) four-phase model of interest development provides a useful framework for analyzing AI's impact on motivation. While AI chatbots effectively trigger situational interest, many studies highlight difficulties in maintaining situational interest or individual interest (Fryer et al., 2017; Haristiani, 2019; N., M., 2022). For instance, Haristiani (2019) found that student engagement with AI chatbots declined over time, particularly when compared to human conversation partners. Similarly, Fryer et al. (2017) emphasized that while chatbot interactions initially attract students, sustaining engagement requires pedagogical strategies that extend beyond novelty.

Recent advancements in AI, such as ChatGPT, offer potential solutions to this issue. Unlike earlier chatbots, ChatGPT generates personalized, dynamic responses using deep neural networks, increasing the potential for maintaining situational interest (Mabuan, 2024; Loos et al., 2023). However, more research is needed to determine whether ChatGPT can be used to successfully sustain engagement over extended periods and foster individual interest in language learning.

3. Limitations and Ethical Concerns

3.1 Technological Limitations

While AI tools offer valuable learning opportunities, several technological challenges remain. One major concern is repetitiveness—many AI chatbots generate responses based on pre-formulated patterns, making interactions predictable over time (Peachey, 2023; Patty, 2024). The predictability of AI generated responses is a subject of growing academic interest, particularly in the context of natural language processing (NLP) and artificial intelligence (AI) reliability. ChatGPT for example is known to operate using probabilistic models trained on vast datasets, meaning its responses are not entirely deterministic but are influenced by learned patterns and contextual cues. Loos et al. (2023) also note that OpenAI does not disclose ChatGPT's exact training dataset, raising concerns about response variation and authenticity.

Another significant limitation is AI's struggle with context and cultural nuances. Despite advancements in natural language processing, AI often misinterprets context, fails to recognize cultural subtleties, and occasionally produces inaccurate information (Meniado, 2023; Loos et al., 2023). The phenomenon of AI hallucination, where chatbots fabricate information, also poses challenges for second-language learners relying on AI for factual correctness (Peachey, 2023). This remains a critical concern in its deployment for academic, medical, legal, and journalistic applications. These hallucinations arise due to the model's reliance on probabilistic language patterns rather than fact verification, potentially resulting in fabricated citations, incorrect data, or inaccurate interpretations of complex topics.

3.2 Ethical and Privacy Concerns

The educational use of AI chatbots raises important ethical considerations, particularly regarding privacy and data security. Many AI applications collect and store user data to enhance system performance, which raises concerns about student confidentiality (Meniado, 2023; Patty, 2024). As an AI-driven platform, ChatGPT processes user input, which may include sensitive personal information, intellectual property, or confidential academic data. The integration of ChatGPT in educational settings presents significant privacy and data security risks that must be carefully considered.

While OpenAI employs data encryption and policies to protect user privacy, there remains a risk of data exposure, unauthorized access, or unintended data retention. Additionally, the use of AI-generated responses raises concerns about algorithmic bias, data misuse, and compliance with educational privacy regulations. Italy's temporary ban on ChatGPT in 2023 highlighted these issues, citing the tool's failure to comply with data protection laws and safeguard minors (UNESCO, 2023). Educators and institutions must implement strict guidelines for responsible AI usage, ensuring that students' personal and academic data remain secure while leveraging the benefits of AI-driven learning tools.

Another concern is the potential decline in human interaction. While AI tools can supplement language learning, overreliance on chatbots may reduce learners' interpersonal communication skills (Meniado, 2023; Fryer et al., 2017). The increasing reliance on AI-driven learning environments presents significant challenges to human interaction. As AI-powered tutoring systems, virtual classrooms, and automated feedback mechanisms become more prevalent, opportunities for peer collaboration, teacher-student

rapport, and the development of essential social skills may diminish. Face-to-face interactions foster critical thinking, emotional intelligence, and communication skills, which are crucial for academic and professional success. Educators must ensure that AI does not replace human engagement but rather it enhances collaborative learning experiences.

4. Gaps in Existing Research and Future Directions

Although research on AI in ESL learning has expanded, several areas require further exploration. Current studies largely focus on AI's short-term effects, with limited longitudinal research on its long-term impact on fluency and retention. Additionally, more investigation is needed into cultural adaptation, ethical safeguards, and AI's role in developing personalized learning pathways.

Future studies should explore how AI can transition situational interest into long-term engagement, refining chatbot design to support deeper learning. Moreover, integrating interdisciplinary perspectives from psychology, sociology, and education technology can provide a more holistic understanding of AI's role in second-language acquisition.

Conceptual Framework

This study is grounded in Hidi and Renninger's (2006) Four-Phase Model of Interest Development, which provides a structured framework for understanding how learners' engagement evolves in educational settings. As shown in Figure 1, the model consists of four phases: situational interest, maintained situational interest, emerging individual interest, and well-developed individual interest. Given that situational interest—often triggered by novelty—is the first step in sustained engagement, this theory is particularly relevant to the study of AI-powered Intelligent Personal Assistants (IPAs) in second-language learning.

Figure 1 Illustration of the four-phase model of interest development by Hidi & Renniger (2006)

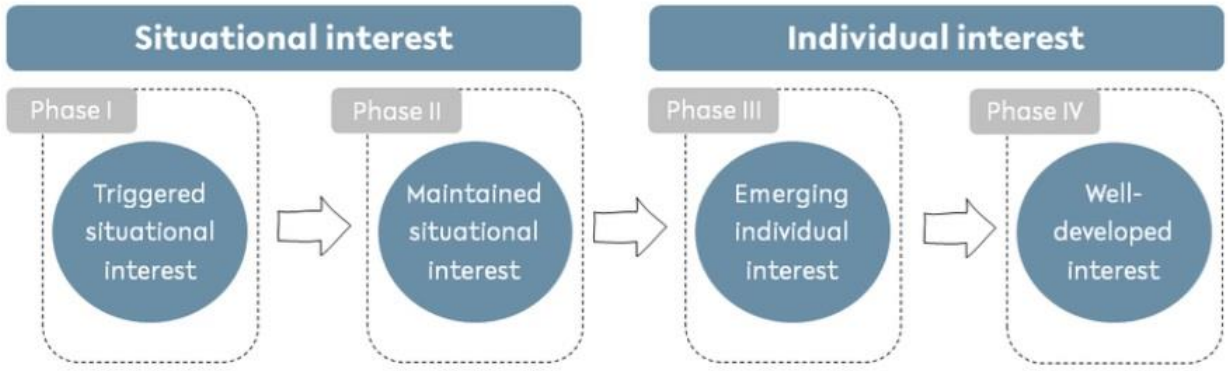

Illustration of the four-phase model of interest development by Hidi & Renninger (2006)

Kramer, Niclas & Wegner, Claas. (2024), p. 59

Situational Interest and AI in Language Learning

Research has consistently shown that AI tools, including ChatGPT, Google Assistant, and Amazon's Alexa, do have the potential to spark situational interest among ESL learners by offering interactive, speech-based conversation opportunities. The cognitive engagement stimulated by AI tools aligns with Hidi and Renninger's concept of triggered situational interest, where learners are drawn into an activity due to external stimuli (e.g., novelty, interactivity, and technological appeal). However, maintaining this

situational interest over time presents challenges. The theory suggests that for situational interest to develop beyond the novelty effect, it is required that students find continued relevance and personal meaning in their interactions.

Results

1. Effectiveness of AI-Powered IPAs in Enhancing Speaking Proficiency and Reducing Anxiety

Research consistently demonstrates that AI-driven Intelligent Personal Assistants (IPAs) such as ChatGPT, Google Assistant, and Amazon Alexa can positively impact ESL learners' speaking confidence, fluency, and listening comprehension. Research shows that situational interest—the initial phase in the four-phased model of interest (Hidi & Renninger, 2006)—increases when students interact with AI-powered chatbots. However, while initial enthusiasm is evident, sustaining long-term engagement remains challenging.

A controlled study by N., M. (2022), conducted with 120 ESL learners over six months, found that 74% of participants reported an increase in speaking confidence after regularly interacting with Google Assistant. Similarly, Jusay & Patty (2024) noted that 68% of students using ChatGPT for conversational practice demonstrated improved pronunciation and fluency compared to a control group using traditional learning methods. Fryer et al. (2017) observed that in group settings, students engaging with IPAs spoke English more frequently and persistently, often self-correcting and reformulating sentences to elicit desired responses from the chatbot.

AI-driven speech recognition tools play a crucial role in fostering interactive learning environments. Underwood (2017) conducted a nine-month study with ESL learners using Google Assistant, Siri, and Alexa, concluding that these tools encouraged spontaneous communication. Students exhibited a 57% increase in speaking turns and displayed a marked reduction in hesitation and anxiety when speaking English in class. Seo et al. (2021) further emphasized that the anonymity provided by AI tools lowered self-consciousness, making learners more willing to take risks in language production.

These findings suggest that AI-powered IPAs offer a pressure-free, accessible, and interactive platform for language practice, particularly for learners who may struggle with confidence in traditional classroom settings. However, despite these positive outcomes, the research also highlights several limitations for educators to address.

2. Limitations and Challenges in AI-Assisted Language Learning

2.1 The Novelty Effect and Declining Long-Term Engagement

While AI tools initially generate enthusiasm, research indicates that situational interest does not always develop into maintained situational interest or individual interest (Haristiani, 2019; Fryer et al., 2017). This three-month study involving 85 university students found that while 93% of participants were highly engaged during the first month of chatbot use, engagement dropped to 54% by the third month. The novelty effect, commonly observed with emerging technologies, contributes to this decline, with some learners losing motivation as interactions with AI become predictable.

2.2 Repetitive and Predictable AI Responses

A major drawback reported across multiple studies is AI's tendency to generate repetitive and formulaic responses, which can hinder engagement and limit the depth of conversational learning. Peachey (2023) describes this phenomenon as "repetitive task automation", where AI outputs structured yet uninspired

dialogue. Loos et al. (2023) further note that ChatGPT's responses appear to rely on pre-formulated phrases, reducing their adaptability to spontaneous or nuanced interactions.

2.3 Contextual and Cultural Limitations of AI

Another recurring issue in AI-assisted language learning is the lack of contextual and cultural awareness in chatbot-generated responses. One of the fundamental difficulties in language learning is assessing fluency. Fluency is a qualitative attribute that involves a learner's ability to communicate smoothly and naturally in real-world scenarios. While some AI-powered tools can analyze sentence structure, vocabulary usage, and grammatical accuracy, they struggled to measure the naturalness of speech. AI models cannot assess factors like hesitation, pacing, and intonation in spoken language, which are crucial elements of fluency.

contextual appropriateness: While AI can generate grammatically correct sentences, it may fail to evaluate whether a phrase is contextually appropriate or culturally relevant.

Unlike human instructors, AI cannot fully replicate spontaneous and dynamic interactions that test a learner's real-time adaptability in conversations. Patty (2024) and Meniado (2023) found that while AI models like ChatGPT can simulate human-like conversation, they often fail to grasp nuanced expressions, cultural references, and idiomatic language, leading to occasional misinterpretations and unnatural phrasing.

For instance, Loos et al. (2023) conducted an experiment where ESL students engaged in role-play exercises with AI chatbots, simulating workplace interactions. The study found that 47% of AI-generated responses lacked cultural sensitivity or contextual relevance, potentially leading to misleading or awkward exchanges in real-world communication. AI-generated responses, such as those produced by ChatGPT, have been found to lack cultural sensitivity or contextual relevance. Given that AI models are trained on diverse datasets that may not fully account for regional, historical, or socio-cultural nuances, their responses can sometimes perpetuate biases, reinforce stereotypes, or misrepresent critical aspects of a given culture.

The specific accents non-native speakers generally employ potentially pose another challenge. Dizon (2017) specifically highlighted Amazon Alexa's difficulty in understanding non-standard accents, leading to 30% of participants experiencing frustration due to miscommunication. However, Google Assistant and ChatGPT demonstrated higher adaptability in processing diverse accents, making them more effective tools for a global ESL audience. Additionally, accents influence pronunciation but do not necessarily indicate incorrect grammar or vocabulary usage, making it difficult for AI to provide targeted corrections. As a result, learners may receive feedback that does not fully account for their linguistic background, potentially reinforcing unnatural or inauthentic language use rather than helping them refine their communication skills within their specific context.

2.4 Privacy and Ethical Concerns

Privacy remains a significant concern in AI-driven learning environments. Most AI-powered IPAs collect and store personal data to refine system performance, raising ethical questions about data security (Meniado, 2023). UNESCO (2023) highlighted that Italy temporarily banned ChatGPT in April 2023 due to concerns about data protection, lack of user consent, and potential risks for minors.

A survey by Bibauw et al. (2019) found that 65% of students expressed discomfort in sharing personal thoughts with AI-driven chatbots, fearing that their conversations might be recorded or analyzed. It is therefore the task of Educators and policymakers to ensure that students understand the risks associated

with AI data collection and implement measures to protect user privacy, particularly in educational settings.

Another ethical challenge involves the accuracy and cultural sensitivity of AI-driven language models. While these tools provide immediate feedback, their training data may contain biases that could influence how language is taught and understood. Many different accents, dialects, and linguistic nuances are often underrepresented or misinterpreted by AI, potentially leading to the reinforcement of a particular "standard" accent (Dizon, 2017) or dialect at the expense of linguistic diversity.

Furthermore, AI cannot foster the emotional connections that support language learners in overcoming barriers such as anxiety, hesitation, and fear of making mistakes. In a human-centered learning environment, teachers and peers provide encouragement, corrective feedback, and social reinforcement, which help learners gain confidence and fluency. AI tools, while useful in repetition-based learning and pronunciation practice, fail to offer the same level of empathy or adaptive social interaction. A teacher or conversation partner can recognize when a student is struggling, adjust their speaking pace, rephrase a sentence, or offer a real-time example tailored to the learner's needs. In contrast, AI often follows rigid algorithms, providing generic responses that may not address the nuances of a student's difficulties or unique learning style. This limitation could lead to frustration or disengagement, particularly for learners who require a more personalized, interactive approach to language acquisition.

2.5 Reduced Human Interaction in ESL Learning

While AI tools facilitate individualized practice, some researchers argue that overreliance on AI could reduce human-to-human interaction in language learning. Fryer et al. (2017) and Meniado (2023) both emphasize that interpersonal communication is a key component of effective language acquisition, as it fosters creative expression, critical thinking, and deeper social engagement. AI, while valuable, cannot fully replicate the spontaneity and emotional nuance of human conversation.

Moreover, the overreliance on AI for language instruction may reduce opportunities for meaningful human interaction, which is crucial in language acquisition. AI cannot fully replicate the social and emotional aspects of communication, such as tone, body language, and contextual understanding, which are fundamental to mastering a language. Loos et al. (2023). For instance, the same sentence can have different meanings depending on the speaker's intonation, facial expressions, or body language, which AI-powered tools fail to capture fully. Without exposure to these non-verbal cues, EFL learners may struggle with pragmatic aspects of communication, such as understanding implied meanings, or cultural references essential for real-world language use."

A comparative study by N., M. (2022) involving two ESL learner groups, one using AI chatbots exclusively and another engaging in peer-led discussions—found that while AI users demonstrated initial confidence gains, peer-led discussions resulted in stronger long-term speaking proficiency and retention of learned expressions. This finding underscores the importance of blending AI-assisted practice with real-world conversational exposure.

As Fryer L K Ainley M Thompson A Gibson A and Sherlock Z (2017) point out, one of AI's key limitations in assisting English as a Second Language (ESL) learners with speaking practice is its inability to provide real-time pronunciation feedback or correct spoken grammatical errors effectively. While it can analyze written text and suggest improvements, it cannot hear and interpret spoken language nuances, such as intonation, stress, and fluency. Unlike a human tutor, ChatGPT cannot detect mispronunciations or offer targeted phonetic corrections, making it less effective for refining oral communication skills.

Additionally, spoken language involves spontaneous speech patterns, fillers, and contextual cues that AI struggles to assess dynamically.

3. Practical Implications for ESL Education

The findings of this research highlight both the potential benefits and challenges of AI-assisted ESL learning. To maximize the advantages while addressing limitations, educators can adopt the following pedagogical strategies:

- Incorporate AI in Role-Playing Scenarios – Structured AI-led role-play activities can help ESL learners simulate real-world interactions while maintaining engagement (Peachey, 2023).
- Use AI as a Supplementary Tool, not a Replacement – AI should be integrated alongside traditional teaching methods to ensure balanced language development (Meniado, 2023).
- Personalized AI Feedback and Adaptive Learning Paths – Future AI models should be designed to provide tailored feedback, helping students refine grammar, pronunciation, and fluency in a more dynamic way (Zou et al., 2023).
- Address Privacy Concerns in AI-Assisted Learning – Institutions should educate students about data security risks and ensure compliance with privacy regulations before implementing AI-based tools in language learning (UNESCO, 2023).

4. Conclusion

The findings of this study confirm that AI-powered IPAs, including ChatGPT, Google Assistant, and Alexa, do have the potential to enhance EFL learners' speaking confidence, reduce anxiety, and provide valuable conversational practice. However, challenges such as the novelty effect, repetitive AI responses, privacy concerns, and reduced human interaction must be carefully managed to ensure long-term learning effectiveness.

Future research should explore ways to sustain learner engagement over extended periods, refine AI's contextual understanding, and develop more personalized, culturally adaptive language-learning experiences. By integrating AI thoughtfully into EF L education, educators can harness its potential while preserving the essential elements of human communication and social learning.

Recommendations

1. Leveraging Fictional Role-Play to Overcome AI Limitations

Fictional role-play presents a strategic solution to AI's repetitive nature, occasional lack of contextual understanding, and privacy concerns, as identified in the study. By immersing learners in diverse and interactive scenarios, AI-powered Intelligent Personal Assistants (IPAs) such as ChatGPT, Google Assistant, and Amazon Alexa can provide structured yet dynamic conversational practice that enhances fluency, vocabulary retention, and overall speaking confidence.

This approach mitigates AI's predictability by introducing varied character roles, settings, and challenges, keeping students engaged over time. Haristiani (2019) and Patty (2024) highlight that place-based role-playing exercises are particularly effective in reinforcing situational language skills. Educators can design pre-structured AI prompts for real-life interactions such as:

- Ordering food at a restaurant – The AI assumes the role of a waiter, responding dynamically to student orders and questions.
- Attending a job interview – The AI acts as an employer, asking competency-based questions and pro-

viding simulated interview feedback.

- Booking a hotel room or making travel inquiries – The AI plays the role of a receptionist or airline representative, allowing students to practice real-world transactional conversations.

By embedding clear conversational objectives into role-play scenarios, educators can ensure that learners interact with AI in a meaningful way, reducing monotony while strengthening their command of place-specific vocabulary. Additionally, fictional role-play can serve as a low-risk, privacy-conscious learning tool by eliminating the need for students to share personal information during AI interactions.

2. Enhancing Engagement through AI-Generated Guest Speakers

Beyond situational role-play, educators can further personalize and diversify AI interactions by programming IPAs to take on the role of guest speakers (Peachey, 2023). This technique allows students to engage with AI in contextually relevant, industry-specific, or culturally immersive conversations.

For instance, students can ask questions to AI personas representing:

- A football manager discussing game strategies, sports terminology, and post-match analysis.
- A traveler visiting an English-speaking country sharing insights into cultural differences, sightseeing, and international experiences.
- A historical figure or celebrity such as Shakespeare, Albert Einstein, or Elon Musk, responding in language and tone reflective of their persona.
- This guest speaker Q&A format provides a stimulating and practical context for ESL learners to:
- Engage with domain-specific vocabulary and sentence structures relevant to real-world scenarios.
- Practice both formal and informal registers of English, adapting their speech to different conversational settings.
- Develop critical thinking and spontaneous response skills by asking and answering questions in real-time.

By alternating between AI-led conversations and human-led discussions, educators can combine AI-driven engagement with peer interaction, preventing an over-reliance on machine-based learning while enhancing social communication skills.

3. Addressing Privacy and Ethical Considerations in AI-Assisted Learning

While AI tools enhance accessibility and convenience, concerns over data security and personal privacy remain paramount (UNESCO, 2023). One of the key advantages of fictional role-play is that it eliminates the need for students to disclose real personal details, creating a safer and more ethical learning environment.

To further mitigate data risks, educators should consider implementing:

- Local AI processing – Utilizing offline, classroom-based AI applications rather than cloud-based systems to ensure conversations remain private.
- Anonymized user interactions – Encouraging students to use fictional names or characters while engaging in AI dialogues.
- Clear institutional guidelines on AI use – Establishing data protection protocols for classroom-based AI applications, ensuring compliance with privacy laws and ethical standards.
- Educators should also educate students on responsible AI usage, helping them understand what personal information should and should not be shared when interacting with AI-driven language tools.

4. Training Educators to Effectively Integrate AI into ESL Learning

For AI to be effectively incorporated into second-language education, educators must receive specialized

training on how to design, monitor, and evaluate AI-assisted learning experiences. Training programs should equip teachers with competencies in:

- AI Prompt Engineering – Crafting structured prompts that guide AI conversations toward meaningful language practice while minimizing irrelevant or inaccurate responses.
- Monitoring AI Accuracy and Pedagogical Alignment – Evaluating AI-generated responses for linguistic appropriateness, ensuring consistency with curriculum goals.
- Adaptive Teaching Strategies – Balancing AI-driven practice with human interaction, ensuring students develop both digital fluency and real-world communicative competence.
- Ethical AI Use in Education – Understanding data privacy laws, institutional AI policies, and responsible technology integration.
- To facilitate professional development, institutions could implement AI-focused teacher training programs through:
- Workshops on AI-assisted language instruction led by experts in educational technology.
- Online certification courses covering AI literacy, chatbot customization, and best practices for ESL integration.
- Collaborative teaching communities where educators share insights, challenges, and innovative AI-based lesson plans.

By equipping teachers with technical and pedagogical expertise, schools can maximize AI's benefits while minimizing its limitations, ensuring that AI serves as a complementary rather than substitute learning tool.

5. Implementing a Long-Term Evaluation Framework for AI Integration

To assess the effectiveness of AI-driven ESL instruction, educators and researchers should implement a structured evaluation framework based on:

- Learner Performance Metrics – Tracking improvements in fluency, pronunciation, and conversational spontaneity over time.
- Engagement and Retention Data – Measuring how long students remain actively engaged with AI tools and whether they continue using them beyond the initial novelty phase.
- Qualitative Feedback from Learners and Teachers – Conduct regular surveys, focus groups, and classroom observations to identify strengths, challenges, and areas for improvement.

Comparative Studies – Analyzing learning outcomes in AI-assisted environments versus traditional ESL teaching methods to determine the most effective balance between human and AI interaction.

By adopting a reflective and adaptive approach, educators can ensure that AI-assisted ESL learning remains dynamic, responsive, and aligned with student needs.

6. Conclusion

AI-powered IPAs hold great potential for enhancing speaking confidence, engagement, and fluency in ESL learners, particularly when used in structured role-play scenarios. However, for long-term effectiveness, educators must:

- Leverage fictional role-play to mitigate AI's limitations, ensuring interactive, contextually relevant language practice.
- Introduce AI-generated guest speakers to expose students to varied linguistic registers and domain-specific vocabulary.

- Implement privacy safeguards by using offline tools, anonymization techniques, and data protection policies.
- Train educators to integrate AI effectively, balancing digital learning with human interaction.
- Establish a long-term evaluation framework to track progress, address challenges, and refine AI-assisted teaching strategies.

Through careful implementation, educator training, and continuous assessment, AI can serve as a powerful supplement to ESL instruction, enriching language education while preserving the irreplaceable value of human communication.

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