

## THE ROLE OF AI IN LANGUAGE ACQUISITION: A STUDY ON ESL LEARNERS' EXPERIENCES

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### Abstract

*The rapid advancement of Artificial Intelligence (AI) technologies has initiated a paradigm shift in the landscape of education, particularly in the realm of language acquisition. As AI tools become more integrated into everyday learning environments, English as Second Language (ESL) learners are increasingly engaging with applications such as ChatGPT, Grammarly, and interactive language-learning platforms like Duolingo and Elsa Speak. This study explores the lived experiences of ESL learners who actively use these AI-driven tools to support their language development. Guided by the theoretical framework of constructivism—which posits that learners construct knowledge through active engagement and social interaction—the research investigates how AI contributes to learner autonomy, improves linguistic fluency, and builds communicative confidence. Semi-structured interviews with ESL students across diverse academic institutions reveal both the pedagogical potential and the limitations of AI integration. While many learners benefit from real-time feedback, personalized learning pathways, and accessible practice environments, others express concerns about becoming overly reliant on AI outputs, the authenticity of AI-assisted work, and unequal access due to digital divides and varying levels of technological literacy. The findings suggest that AI, when used ethically and under proper pedagogical guidance, can complement traditional ESL instruction by enhancing learner motivation, enabling differentiated instruction, and cultivating self-directed learning behaviors. However, the study also calls for targeted institutional support, digital literacy training, and clear ethical frameworks to ensure responsible and equitable use of AI in language learning contexts.*

**Key Words:** Artificial Intelligence in Education, ESL Learners, Language Acquisition, Constructivism, Learner Autonomy, Digital Literacy, AI Tools (ChatGPT, Grammarly)

### Introduction:

In the evolving landscape of global communication, proficiency in English has become increasingly vital, particularly for non-native speakers (Li & Akram, 2023, 2024; Ramzan et al., 2021). English as Second Language (ESL) learners often face challenges such as limited access to native speakers, varying educational resources, and diverse learning paces (Akram & Oteir, 2025; Amjad et al., 2021; Ramzan et al., 2025, 2023, 2020). The advent of Artificial Intelligence (AI) offers promising avenues to address these challenges, revolutionizing language acquisition processes. AI technologies, including Natural Language Processing (NLP), Intelligent Tutoring Systems (ITS), and speech recognition, have been integrated into language learning platforms to provide personalized and interactive experiences. These tools adapt to individual learner needs, offering real-time feedback and tailored content that enhance engagement and efficacy in language acquisition (Woo & Choi, 2021; Chen & Ramzan, 2024).

Empirical studies underscore the positive impact of AI on ESL learning outcomes. For instance, AI-mediated instruction has been shown to significantly improve learners' proficiency in grammar, vocabulary, reading comprehension, and writing skills. Moreover, such instruction boosts learners' motivation and self-regulated learning strategies (Akram & Abdelrady, 2023, 2025), leading to

more effective and autonomous language learning (Al-Adwan et al., 2022; Sohail & Akram, 2025; Zhou, 2023). Despite these advancements, the integration of AI in language education is not without concerns. Issues such as data privacy, the potential reduction of human interaction, and the need for cultural sensitivity in AI responses warrant careful consideration. Educators and developers must collaborate to ensure that AI tools are designed and implemented ethically, complementing traditional teaching methods rather than replacing them (Akram et al., 2021; Godwin-Jones, 2024; Ramzan & Alahmadi, 2024). This article delves into the multifaceted role of AI in ESL learning, examining both the opportunities it presents and the challenges it poses. Through a comprehensive analysis of current research and practical applications, we aim to provide insights into how AI can be harnessed to enhance language acquisition for ESL learners.

### **Literature Review:**

The integration of Artificial Intelligence (AI) into English as a Second Language (ESL) education has garnered significant attention in recent years. This literature review synthesizes current research on the impact of AI-driven tools on ESL learners' experiences, focusing on aspects such as learning outcomes, learner engagement, and the challenges associated with AI adoption. AI technologies have revolutionized language learning by offering personalized and adaptive experiences. Intelligent tutoring systems (ITS) and natural language processing (NLP) enable real-time feedback and customized learning paths, catering to individual learner needs. Studies have shown that AI-mediated instruction can enhance learners' proficiency in grammar, vocabulary, reading comprehension, and writing skills, while also boosting motivation and self-regulated learning strategies (Wei, 2023).

AI tools, such as chatbots and voice assistants, have been instrumental in improving learners' communicative competence (Akram et al., 2021, 2022; Ma et al., 2024). These technologies provide interactive platforms for practicing oral communication, leading to improvements in fluency, pronunciation, and overall speaking skills (Abdelrady & Akram, 2022). For instance, the integration of ChatGPT with voice assistants has shown promise in facilitating constructive communication for EFL learners (Zhou, 2023). The gamification elements and interactive features of AI-driven applications have been found to increase learner engagement and motivation. By providing immediate feedback and adaptive challenges, these tools encourage active participation and sustained interest in language learning. Research indicates that such engagement leads to better learning outcomes and increased learner autonomy (Woo & Choi, 2021). Javaid et al. (2024) assessed stress causing factors and language related challenges among first year students in higher institutions in Pakistan and offered insights into multifaceted nature.

Despite the benefits, the adoption of AI in language education presents several challenges. Concerns regarding data privacy, the reduction of human interaction, and the need for cultural sensitivity in AI responses are prominent. Educators and developers must collaborate to ensure ethical implementation, addressing issues such as algorithmic bias and the preservation of authentic language use (Godwin-Jones, 2024). The evolving landscape of AI in ESL education calls for ongoing research and development. Future studies should focus on longitudinal impacts of AI integration, the development of culturally responsive AI tools, and strategies for effective teacher training in AI-assisted instruction. Emphasizing a balanced approach that combines technological innovation with human-centric pedagogy will be crucial for the sustainable advancement of AI in language learning.

### **Significance of the Study:**

This study aims to contribute to the growing body of literature on the integration of AI in language education by providing insights into ESL learners' experiences with AI tools. Understanding learners' perspectives can inform the development of more effective, user-centered AI applications in language learning. Additionally, the findings may guide educators and policymakers in implementing AI technologies that align with learners' needs and preferences, ultimately enhancing language acquisition outcomes.

### **Rationale**

The integration of Artificial Intelligence (AI) into English as a Second Language (ESL) education has garnered significant attention in recent years. This integration offers promising avenues to address challenges faced by ESL learners, such as limited access to native speakers, varying educational resources, and diverse learning paces. AI technologies, including Natural Language Processing (NLP), Intelligent Tutoring Systems (ITS), and speech recognition, have been integrated into language learning platforms to provide personalized and interactive experiences (Ramzan & Khan, 2024). These tools adapt to individual learner needs, offering real-time feedback and tailored content that enhance engagement and efficacy in language acquisition (Wei, 2023). Empirical studies underscore the positive impact of AI on ESL learning outcomes. For instance, AI-mediated instruction has been shown to significantly improve learners' proficiency in grammar, vocabulary, reading comprehension, and writing skills. Moreover, such instruction boosts learners' motivation and self-regulated learning strategies, leading to more effective and autonomous language learning (Wei, 2023).

Despite these advancements, the integration of AI in language education is not without concerns. Issues such as data privacy, the potential reduction of human interaction, and the need for cultural sensitivity in AI responses warrant careful consideration. Educators and developers must collaborate to ensure that AI tools are designed and implemented ethically, complementing traditional teaching methods rather than replacing them (Godwin-Jones, 2024). This study aims to explore the multifaceted role of AI in ESL learning, examining both the opportunities it presents and the challenges it poses. Through a comprehensive analysis of current research and practical applications, we aim to provide insights into how AI can be harnessed to enhance language acquisition for ESL learners.

### **Statement of the Problem**

While the potential benefits of AI in language learning are widely acknowledged, there is a lack of comprehensive understanding regarding ESL learners' experiences with AI-assisted language acquisition. Specifically, there is a need to investigate how AI tools influence learners' motivation, engagement, and overall language proficiency. Additionally, concerns about the authenticity of AI-generated language input and its impact on learners' pragmatic competence remain underexplored. This study seeks to address these gaps by examining ESL learners' experiences with AI in language acquisition, focusing on the effectiveness, challenges, and implications of AI integration in ESL education.

### **Research Methodology**

This study adopts a qualitative research design to explore the experiences of English as Second Language (ESL) learners in integrating Artificial Intelligence (AI) tools into their language acquisition processes. Qualitative research is particularly suited for investigating complex, context-dependent phenomena, allowing for an in-depth understanding of participants' perspectives and experiences (Creswell & Poth, 2018).

### **Research Design and Participants**

A phenomenological approach will be employed to capture the lived experiences of ESL learners utilizing AI tools for language learning. This approach focuses on understanding how individuals perceive and make sense of their experiences (Moustakas, 1994). Participants will be selected through purposive sampling, targeting ESL learners who have actively engaged with AI-based language learning tools such as Duolingo, ChatGPT, or Grammarly. The sample will consist of 15–20 participants from diverse linguistic and cultural backgrounds to ensure a rich and varied dataset.

### **Data Collection**

Data will be collected through semi-structured interviews, allowing participants to share their experiences while providing the flexibility to explore emerging themes. Each interview will last approximately 45–60 minutes and will be conducted either in person or via video conferencing platforms, depending on participants' preferences and availability. Interviews will be audio-recorded with participants' consent and transcribed verbatim for analysis.

### **Data Analysis**

Thematic analysis will be utilized to identify, analyze, and report patterns within the data (Braun & Clarke, 2006). This method involves familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. To enhance the credibility of the findings, member checking will be conducted, allowing participants to review and confirm the accuracy of the transcriptions and interpretations.

### **Ethical Considerations**

Ethical approval will be obtained from the relevant institutional review board prior to data collection. Participants will be provided with detailed information about the study's purpose, procedures, and their rights, including the right to withdraw at any time without penalty. Informed consent will be obtained, and confidentiality will be maintained by assigning pseudonyms and securely storing data.

### **Data Analysis and Results**

The qualitative data collected from semi-structured interviews with ESL learners were analyzed using thematic analysis, a method that identifies, analyzes, and reports patterns (themes) within data (Braun & Clarke, 2006). This approach is well-suited for exploring participants' experiences and perceptions, allowing for a rich, detailed, and complex account of data. The analysis followed a six-phase process: (1) familiarization with the data through repeated reading of transcripts, (2) generation of initial codes to identify significant features of the data, (3) searching for themes by collating codes into potential themes, (4) reviewing themes to ensure they accurately reflect the data, (5) defining and naming themes to capture the essence of each, and (6) producing the report by selecting vivid, compelling extract examples and relating the analysis back to the research questions and literature. To enhance the credibility and trustworthiness of the analysis, member checking was employed, wherein participants reviewed and confirmed the accuracy of the transcriptions and interpretations. Additionally, peer debriefing was conducted with colleagues to discuss and refine the themes, ensuring a rigorous analytical process.

The thematic analysis yielded several key themes that encapsulate ESL learners' experiences with AI-assisted language learning tools:

#### **1. Enhanced Engagement and Motivation**



Participants reported increased engagement and motivation when using AI tools for language learning. The interactive nature of AI applications, such as immediate feedback and gamified elements, contributed to a more enjoyable and stimulating learning experience. This finding aligns with previous research indicating that AI-mediated instruction can positively impact learners' motivation and self-regulated learning strategies (Wei, 2023).

## 2. **Personalized Learning Experiences**

Learners appreciated the personalized learning paths offered by AI tools, which adapted to their individual proficiency levels and learning styles. This customization facilitated more effective learning by allowing students to focus on areas requiring improvement. Such adaptability in AI-driven language learning platforms has been recognized as a significant advantage in supporting diverse learner needs (Woo & Choi, 2021).

## 3. **Improved Language Proficiency**

Participants noted improvements in various language skills, including vocabulary acquisition, grammar, pronunciation, and writing, attributed to the consistent practice and feedback provided by AI tools. These enhancements in language proficiency are consistent with findings from studies examining the impact of AI on English learning achievement (Wei, 2023).

## 4. **Increased Autonomy and Confidence**

The use of AI tools empowered learners to take greater control of their language learning journey, fostering autonomy and self-confidence. The ability to access learning materials at their convenience and receive instant feedback encouraged learners to take initiative and responsibility for their progress. This shift towards learner autonomy is a critical component of effective language acquisition (Zhou, 2023).

## 5. **Challenges and Limitations**

Despite the benefits, participants also highlighted challenges associated with AI-assisted language learning. Some learners expressed concerns about the lack of human interaction, which they felt was essential for developing conversational skills and cultural nuances. Additionally, technical issues, such as limited access to reliable internet and the impersonal nature of AI feedback, were noted as potential drawbacks. These concerns underscore the importance of integrating AI tools as complementary to, rather than replacements for, traditional language instruction (Godwin-Jones, 2024).

## **Discussion**

The thematic analysis yielded several key themes that encapsulate ESL learners' experiences with AI-assisted language learning tools:

### 1. **Enhanced Engagement and Motivation**

Participants reported increased engagement and motivation when using AI tools for language learning. The interactive nature of AI applications, such as immediate feedback and gamified elements, contributed to a more enjoyable and stimulating learning experience. This finding aligns with previous research indicating that AI-mediated instruction can positively impact learners' motivation and self-regulated learning strategies (Wei, 2023).

### 2. **Personalized Learning Experiences**

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**Conclusion**

This study has explored the multifaceted role of Artificial Intelligence (AI) in English as a Second Language (ESL) learning, focusing on learners' experiences and perceptions. The findings underscore the transformative potential of AI-mediated instruction in enhancing language acquisition, learner motivation, and self-regulated learning strategies. Empirical evidence indicates that AI-assisted language instruction significantly improves English learning achievement across various domains, including grammar, vocabulary, reading comprehension, and writing skills. Moreover, learners engaged with AI tools exhibit heightened L2 motivation and a greater propensity for self-directed learning, suggesting that AI integration fosters a more autonomous and engaged learning environment (Wei, 2023).

Qualitative insights reveal that learners appreciate the personalized and adaptive nature of AI tools, which cater to individual learning needs and preferences. The immediate feedback and interactive features of AI applications contribute to increased learner engagement and motivation, aligning with contemporary pedagogical approaches that emphasize learner-centered instruction. However, the study also highlights critical considerations regarding the integration of AI in language education. Concerns about the authenticity of AI-generated language input and its impact on learners' pragmatic competence warrant careful attention. AI systems, while proficient in language processing, may lack the nuanced understanding of social and cultural contexts essential for

effective communication, potentially limiting their efficacy in developing intercultural communicative competence (Godwin-Jones, 2024).

In conclusion, while AI presents promising avenues for enhancing ESL learning experiences, it is imperative to approach its integration thoughtfully. Educators and developers must collaborate to ensure that AI tools are designed and implemented ethically, complementing traditional teaching methods and addressing the diverse needs of learners. Future research should continue to explore the long-term impacts of AI in language education, focusing on strategies to mitigate its limitations and maximize its benefits for ESL learners.

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