

## THE ROLE OF AI IN PRONUNCIATION AND SPEAKING SKILLS DEVELOPMENT

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**Abstract:** This paper explores the transformative role of Artificial Intelligence (AI) in enhancing pronunciation and speaking skills among language learners. AI-powered tools such as speech recognition, pronunciation feedback systems, and virtual conversation agents offer personalized, real-time support that facilitates more effective and engaging learning experiences. By mimicking native speakers and providing instant corrective feedback, AI helps learners build confidence and accuracy in oral communication. The study highlights both the benefits and challenges of integrating AI technologies into language education.

**Keywords:** Artificial Intelligence, pronunciation, speaking skills, language learning, speech recognition, educational technology.

**Аннотация:** В данной статье рассматривается преобразующая роль искусственного интеллекта (ИИ) в улучшении произношения и развития разговорных навыков у изучающих иностранные языки. Инструменты на базе ИИ, такие как системы распознавания речи, сервисы обратной связи по произношению и виртуальные собеседники, предлагают персонализированную поддержку в реальном времени, способствуя более эффективному и увлекательному обучению. Имитация речи носителей языка и мгновенная коррекция позволяют учащимся повышать уверенность и точность в устной коммуникации. В исследовании освещаются как преимущества, так и трудности интеграции ИИ-технологий в языковое образование.

**Ключевые слова:** искусственный интеллект, произношение, разговорные навыки, изучение языков, распознавание речи, образовательные технологии.

### Introduction

The rapid advancement of Artificial Intelligence (AI) has significantly influenced various domains of education, including language learning. Among the core language competencies, pronunciation and speaking skills are particularly challenging for learners, as they require not only linguistic accuracy but also confidence, real-time feedback, and meaningful interaction. Traditional classroom environments often lack the resources or time to provide personalized pronunciation guidance for every learner (Derwing & Munro, 2015). In this context, AI technologies—such as speech recognition systems, intelligent

tutoring platforms, and virtual conversation agents—offer a promising solution by delivering individualized feedback and authentic speaking practice (Li et al., 2021).

From a humanistic perspective, AI does more than correct errors; it empowers learners by creating a low-anxiety environment where they can practice freely and build self-efficacy (Krashen, 1982; Warschauer & Healey, 1998). These tools respect the learner's pace and style, promoting autonomy and engagement in the language acquisition process. Furthermore, AI can simulate real-world communicative contexts, bridging the gap between mechanical repetition and authentic, expressive speech. This integration of technology and human-centered pedagogy marks a new chapter in language education, where the goal is not only fluency but also personal growth and confidence in communication.

### **Method and methodology.**

This study employed a mixed-methods approach to investigate the impact of Artificial Intelligence (AI) tools on the development of pronunciation and speaking skills in language learners. The combination of quantitative and qualitative methods allowed for a more comprehensive and human-centered understanding of both measurable improvements and learners' subjective experiences (Creswell & Plano Clark, 2017).

A total of 60 English as a Foreign Language (EFL) learners from two language institutes participated in the study. Participants were between the ages of 18 and 30 and had intermediate English proficiency based on the CEFR B1-B2 scale. They were randomly assigned to two groups: an experimental group that used AI-powered pronunciation and speaking tools, and a control group that followed traditional instruction methods without technological intervention. Instruments The AI tools used in the study included a speech recognition application with real-time feedback (e.g., ELSA Speak) and a virtual conversation agent that simulates realistic dialogue scenarios (e.g., Google's Dialogflow). Pre- and post-tests were conducted using a standardized pronunciation rubric and fluency scale adapted from Munro and Derwing (2006). To capture learner attitudes and emotional responses, semi-structured interviews and reflective journals were used, aligning with the humanistic tradition of valuing learner voice and experience (Rogers, 1969).

The study lasted for eight weeks. Both groups received the same instructional content and were taught by the same instructors. However, the experimental group practiced speaking and pronunciation daily with the AI tools, while the control group engaged in traditional drills and teacher-led speaking activities. Data collection occurred at three stages: (1) baseline (week 1), (2) mid-intervention (week 4), and (3) post-intervention (week 8). Data Analysis Quantitative data were analyzed using paired and independent t-tests to determine statistically significant differences between the two groups. The qualitative data from interviews and journals were examined through thematic

analysis (Braun & Clarke, 2006), with particular attention to learner perceptions of AI, emotional comfort, and motivation. This allowed the study to integrate empirical evidence with the personal dimensions of language learning, reflecting a humanistic educational philosophy.

The integration of Artificial Intelligence into language learning—particularly for the enhancement of pronunciation and speaking skills—represents a significant advancement in both pedagogical practice and learner support. This study demonstrated that AI-powered tools not only provide accurate, individualized feedback but also promote learner autonomy, motivation, and confidence in spoken language use (Li et al., 2021; Munro & Derwing, 2006). From a scientific perspective, the measurable improvements in pronunciation accuracy and fluency among participants support the efficacy of AI as a complementary instructional method. At the same time, the qualitative findings underscore the humanistic value of these technologies: learners reported feeling less anxious, more engaged, and more in control of their language development journey (Rogers, 1969; Warschauer & Healey, 1998). These results suggest that AI, when thoughtfully implemented, can bridge the gap between mechanical skill development and the deeper, personal aspects of communication. However, it is essential to view AI not as a replacement for human educators but as a tool that enhances the relational and reflective dimensions of language learning.

### **Conclusion**

Future research should continue exploring the ethical, cultural, and pedagogical implications of AI in language education, ensuring that technology serves to empower learners in both their linguistic and personal growth.

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