

# THE CORRELATION BETWEEN THE USE OF CHATGPT VOICE CHAT FEATURE ON PRONUNCIATION AMONG STUDENTS AT UNIVERSITY LEVEL

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## ABSTRACT

This study aimed to examine the correlation between the use of the ChatGPT voice chat feature and pronunciation improvement among university level EFL learners. Using a qualitative literature study design, the research analyzed findings from recent peer-reviewed publications focusing on AI-based pronunciation tools, speech-recognition feedback and learners' perceptions of ChatGPT-assisted speaking practice. The review shows that ChatGPT voice interaction contributes positively to segmental pronunciation features by providing immediate and accessible corrective feedback, supporting learners' confidence and motivation in oral practice. The findings also indicate that pronunciation gains particularly in suprasegmental elements such as stress, intonation and rhythm remain modest and less stable compared to improvements in other speaking components. The study concludes that ChatGPT voice chat has a meaningful yet partial impact on pronunciation development, functioning effectively as a supplementary tool when integrated with structured instruction rather than as a standalone method.

*Keywords: AI-assisted learning, ChatGPT Voice Chat, EFL learners, Pronunciation*

## INTRODUCTION

In language education, artificial intelligence has emerged as a new breakthrough particularly in addressing the challenges faced by English as a Foreign Language learners. The development of AI-powered tools such as ChatGPT has revolutionized language teaching by providing an easily

accessible, interactive platform for learners to practice a variety of language skills (Hanadi, 2025). Among the innovative features of this technology, the voice chat function has attracted considerable attention due to its potential to improve oral communication skills among students. Research has shown that AI-powered pronunciation tools can provide real-time feedback and offer an innovative approach to pronunciation training with studies showing improvements in certain phonetic elements among university-level learners (Dennis, 2024). As generative artificial intelligence continues to advance in education, understanding its specific impact on pronunciation development becomes increasingly important to optimize language learning outcomes at the higher level.

Despite a growing body of research highlighting the benefits of ChatGPT in improving English speaking skills, significant gaps remain in understanding its effectiveness, particularly for pronunciation development among learners. A quasi-experimental study conducted at Nguyen Tat Thanh University involving sixty non-English majors revealed that while eight weeks of ChatGPT training resulted in significant improvements in conversational delivery, comprehension, and grammar, pronunciation showed modest progress indicating no sustained improvement over the course of treatment (Nhu, 2024). This finding is particularly significant given that pronunciation is a crucial component of speaking proficiency and is often considered one of the most challenging aspects for EFL learners to master. The divided focus on pronunciation in existing research, coupled with the lack of investigation into why ChatGPT demonstrates lower effectiveness for this particular pronunciation compared to other speaking components, creates a crucial research gap. Understanding whether there is a correlation between the use of ChatGPT voice conversations and pronunciation improvement is crucial for educators and curriculum designers seeking to effectively leverage AI technology in language teaching.

## **LITERATURE REVIEW**

The application of artificial intelligence in language education has transformed traditional approaches to language teaching, particularly in addressing the challenges faced by English as a Foreign Language (EFL) learners. Adiguzel et al. (2023) highlight that AI has emerged as a revolutionary force in education, with ChatGPT demonstrating transformative potential across a variety of educational contexts including language learning applications. Advances in AI-powered devices have created new opportunities for personalized, accessible and interactive language learning experiences previously unattainable through conventional methods (Wei,

2023). AI in language education goes beyond simple technology integration and fundamentally changes pedagogical approaches and learning outcomes. Fathi et al. (2024) demonstrated that AI-mediated interactions significantly improved EFL learners' speaking skills and communication intentions laying the foundation for understanding how technology can facilitate spoken language development. These findings suggest that AI tools create supportive learning environments that reduce anxiety and encourage active engagement in language practice. Wei (2023) further examined the impact of AI on English learning achievement, L2 motivation and self-regulated learning, revealing that AI-powered language learning tools contribute to increased self-regulated learning and motivation among English learners.

Recent research specifically examining the role of ChatGPT in pronunciation instruction reveals both promising results and areas requiring further investigation. Lan (2025) conducted a comprehensive study involving 64 English language students at Dai Nam University using a mixed-methods design to examine learners' perceptions of ChatGPT in pronunciation training. The study revealed that learners generally viewed ChatGPT's application in pronunciation instruction positively, acknowledging its usefulness in improving pronunciation, its ease of use and their intention to continue using the tool in practice sessions. The study also found that learners still preferred human teachers in pronunciation courses, viewing ChatGPT as a useful aid rather than a substitute for a tutor. Mompean (2024) analyzes how ChatGPT can be used in L2 pronunciation teaching and learning, particularly when practicing English pronunciation integrated into a communicative approach to language teaching. This article discusses the potential use of ChatGPT for production practice, listening practice, and obtaining explanations and examples of target L2 features.

The limitations of this tool for pronunciation practice are also discussed, in addition to the challenges that L2 learners and teachers may face when using the tool. The article concludes that ChatGPT should be considered a complementary tool to other teaching and learning resources as it cannot replace interaction through formal instruction with teachers and other L1 or L2 English speakers in L2 pronunciation development. Lima & Wallace (2024) argue that teachers will be irreplaceable in pronunciation instruction particularly in identifying and addressing individual pronunciation challenges and fostering confidence through empathy and personalization which are beyond the scope of AI. While ChatGPT has audio and speech recognition capabilities, which some learners have already utilized for conversational practice, the study emphasizes that AI devices should serve as teaching assistants, rather than replacing human educators. Hoang et al. (2023)

investigated the role of ChatGPT AI in improving English pronunciation in vocational high school students and found that students developed self-directed learning strategies through regular interactions with the chatbot. The study also revealed that learners required initial guidance and mentoring to effectively use the tool, suggesting that teacher mediated introduction and ongoing support remain critical components of successful implementation.

Automatic Speech Recognition (ASR) technology has played a crucial role in pronunciation assessment and feedback serving as the underlying mechanism for many AI-based language learning tools. Sun (2023) conducted a mixed-methods investigation to assess the impact of ASR technology on EFL learners' pronunciation and second language speaking skills. The study revealed that ASR resulted in measurable improvements in pronunciation accuracy and overall speaking performance especially when combined with a systematic teaching approach. This research highlights the capacity of ASR technology to provide rapid and consistent feedback, often difficult to achieve in traditional classroom learning. Bashori et al. (2024) further explored ASR-based systems through their longitudinal study of a web-based language learning platform. Their research showed that ASR technology not only improved pronunciation accuracy but also positively impacted learners' speaking anxiety and language enjoyment. These psychological factors proved crucial in maintaining learner engagement and facilitating long-term pronunciation development.

Understanding the specific pronunciation challenges faced by EFL learners provides essential context for evaluating AI-based interventions. Farhat Jahara & Hussein Abdelrady (2021) investigated pronunciation problems encountered by Arab undergraduate EFL learners using questionnaires, recorded speech samples, and pronunciation tests. The research revealed that Arabs often mispronounce many sounds of English due to a lack of exposure to English as a foreign language, with particular difficulties in specific phonemes and phonological patterns. The relationship between AI-assisted pronunciation learning and learner motivation has been a significant research focus. Liu et al. (2025) examined the relationship between AI-mediated informal digital English learning, foreign language enjoyment, and L2 ideal self-concept among university EFL students in China. Their study revealed that AI enhanced learning experiences positively impacted learners' L2 ideal self-concept which in turn influenced their learning efforts and pronunciation development. These findings suggest that technology-mediated learning environments can shape learners' self-perceptions and long-term language learning trajectories. Research has shown that AI-based pronunciation tools can impact multiple dimensions of

motivation by providing personalized, non-judgmental feedback that reduces anxiety while encouraging continued practice. The ability of AI tools to create a safe learning environment where learners can experiment without embarrassment has proven invaluable for pronunciation development. Adiguzel et al. (2023) emphasize that ChatGPT's transformative potential in education includes creating accessible learning environments that support diverse learner needs.

Beyond pronunciation, research has examined the broader impact of AI on speaking skill development. Fathi et al. (2024) investigated how AI-mediated interactions improved EFL learners' speaking skills and communication intentions. The study found that AI devices had a significant impact on learners' motivation and learning engagement with learners demonstrating improved speaking performance across multiple dimensions. Qiao & Zhao (2023) examined the impact of AI-based language learning on speaking skills and self-regulation in a Chinese EFL context. This study revealed that AI-based learning ensures learners receive continuous and immediate feedback on their speaking performance. By leveraging AI technologies such as advanced speech recognition and language processing algorithms, learners' pronunciation, grammar and discourse features can be analyzed, enabling real-time corrective feedback.

The integration of AI-based tools into structured classroom-based pronunciation learning has become a crucial research focus. Abdelhalim & Alsehibany (2025) addressed this by investigating the integration of ChatGPT and SpeechAce into structured EFL pronunciation learning in a higher education context in Saudi Arabia. The study employed a sequential mixed-methods design with 71 undergraduate EFL students to examine their effects on segmental features (phoneme accuracy) and suprasegmental features (word stress patterns). Quantitative results showed significant improvements in segmental pronunciation at the word and sentence levels, although improvements in suprasegmental stress patterns were limited. The study found significant improvements in students' Current L2 Self-Motivation and Learning Effort, supporting the pedagogical feasibility of integrating AI-enhanced feedback into a structured EFL context. Research has consistently emphasized that while AI devices offer significant benefits in pronunciation development, they are most effective when carefully integrated into a comprehensive teaching program. Sun (2023) noted that ASR-based interventions produced measurable improvements, particularly when combined with a systematic teaching approach, underscoring the importance of pedagogical design in maximizing the benefits of technology.

## **METHOD**

This study employed a qualitative literature study design to investigate the correlation between the use of the ChatGPT voice chat feature and pronunciation development among university-level EFL learners. A qualitative literature study also known as a systematic narrative review focuses on collecting, interpreting and synthesizing existing scholarly works to generate conceptual insight and identify patterns, theoretical relationships and research gaps within a specific academic domain. This method is appropriate because the phenomenon under investigation involves technological integration in language learning, which has been widely examined in previous empirical and conceptual studies (Pahleviannur, 2022). Rather than gathering primary data through fieldwork, the study relied on secondary data derived from credible academic publications allowing the researcher to comprehensively analyze trends in prior findings, methodological approaches, and theoretical frameworks related to AI-based pronunciation learning.

The data collection technique consisted of an organized process of retrieving peer-reviewed journal articles, conference papers, research reports and academic publications from reputable databases such as Scopus, Web of Science, ERIC, ScienceDirect and Google Scholar (Fiantika, 2022). The selection of these databases ensured that the sources included current, high-quality and globally recognized studies relevant to artificial intelligence in language education, pronunciation instruction, ChatGPT applications, automatic speech recognition (ASR) and learner motivation. Keywords and combinations such as “ChatGPT voice chat,” “AI pronunciation training,” “speech recognition feedback,” “EFL speaking skills,” and “technology-mediated pronunciation learning” were used to locate literature closely aligned with the research focus. Inclusion criteria consisted of (1) publications from 2021–2025 to ensure recency, (2) studies centered on EFL learners at the secondary or university level, (3) research specifically addressing pronunciation development or AI-mediated speaking practice and (4) articles written in English. Exclusion criteria eliminated duplicated studies, non-academic sources and research unrelated to pronunciation or AI-assisted speaking.

The primary data sources consisted of the findings, discussions, and conclusions extracted from each selected article. These data were then analyzed using a qualitative thematic analysis approach (Ratnaningtyas, 2023). Thematic analysis allowed the researcher to identify recurring concepts, categorize evidence, and determine emerging themes relevant to the correlation between ChatGPT voice chat use and pronunciation development. This analytical process involved

several stages (1) reading and familiarizing with the collected data, (2) coding key concepts such as pronunciation accuracy, segmental and suprasegmental improvement, learner motivation, technological affordances, and learning challenges, (3) grouping similar codes into broader themes, and (4) synthesizing the themes to interpret their significance in relation to the research objective. Through this procedure, thematic patterns were identified including the effectiveness of AI-mediated pronunciation feedback, learner perceptions of ChatGPT voice interaction and the comparative limitations of AI versus human instruction. Although this study did not involve direct statistical calculations, correlation assessment was conducted conceptually by examining how previous research linked the frequency or intensity of ChatGPT or ASR-based tool usage with measurable pronunciation outcomes. Studies reporting effect sizes, pre-test/post-test gains or performance metrics were analyzed to understand whether higher engagement levels were associated with greater pronunciation improvement. This qualitative correlation analysis offered an interpretive evidence-based understanding of relationships identified across multiple studies without computing new statistical values.

## FINDING

The findings of this study were generated through an extensive qualitative synthesis of previous research examining the role of ChatGPT, AI-powered voice interaction tools, and automatic speech recognition (ASR) systems in supporting pronunciation development among EFL learners. The data collected from selected journal articles were organized into thematic categories that represent recurring patterns related to pronunciation accuracy, learner perceptions, technological effectiveness and the comparative strengths and limitations of AI-based pronunciation training. To present the synthesized research data clearly, the following table summarizes the key findings from representative studies:

**Table 1. Summary of Research Findings on AI-Based Pronunciation Development**

Author & Year	Tool Technology Used	Participants	Main Finding Related to Pronunciation
Nhu (2024)	ChatGPT Conversation Practice	60 university students	Pronunciation improvement was modest and less stable compared to other speaking components.
Dennis (2024)	AI-Powered Speech Recognition	University EFL learners	Notable improvement in vowel and consonant accuracy; real-time feedback supports self-correction.
Lan	ChatGPT for	64	EFL Positive perception;

(2025)	Pronunciation Drills	students	improvements reported but students still preferred teacher-led correction.
Mompean (2024)	ChatGPT for L2 Pronunciation	Adult language learners	Effective for practice and explanation; limited for suprasegmental feedback.
Bashori et al. (2024)	ASR-Based Learning System	High school learners	Increased pronunciation accuracy and reduced speaking anxiety.
Sun (2023)	ASR for Pronunciation Assessment	EFL university students	Significant improvement when ASR integrated with structured instruction.
Hoang et al. (2023)	Chatbot-Based AI	Vocational students	Learners developed self-directed pronunciation practice routines.

**Source:** Synthesized from selected literature (2023–2025)

Analysis of the literature reveals that AI-powered tools, including ChatGPT voice chat and ASR-based systems, consistently contribute to improvements in pronunciation accuracy among EFL learners. Studies such as Dennis (2024), Sun (2023), and Bashori et al. (2024) highlight that real-time corrective feedback is the most influential feature supporting pronunciation development. Learners benefit from immediate detection of phonetic errors, enabling them to adjust articulatory patterns efficiently. This indicates that technology-mediated feedback can replicate some aspects of teacher-led pronunciation correction. Results show that pronunciation improvement tends to be less stable and less substantial than improvements in other speaking aspects such as grammar, fluency, and comprehension. Nhu (2024) found that although ChatGPT enhanced overall speaking performance, pronunciation gains remained modest. This suggests that while AI tools can support pronunciation practice, their capacity to address deeper phonological challenges such as stress, intonation and rhythm remains limited. These suprasegmental features require nuanced modeling which AI systems may not yet fully replicate.

Learner perception also plays a meaningful role in shaping the effectiveness of AI-based pronunciation tools. Lan (2025) and Hoang et al. (2023) reported that students viewed ChatGPT as helpful, easy to use, and motivating for independent practice. Learners still preferred human instructors for pronunciation feedback due to the need for empathy, individualized correction and contextualized explanation qualities that AI tools currently lack. This highlights the position of AI as a supplementary rather than a replacement tool in pronunciation pedagogy. Finally, the findings emphasize that AI tools are most effective when integrated into a structured learning environment. Studies such as Sun (2023) and Bashori et al. (2024) show that combining AI feedback with

teacher guidance explicit instruction or curriculum based practice results in stronger pronunciation outcomes. These findings collectively suggest a conceptual correlation between consistent use of AI voice-based tools and pronunciation improvement however the effectiveness depends on frequency of use, quality of feedback, learner motivation and the presence of human instructional support.

## **DISCUSSION**

The findings of this literature based study reveal a complex yet meaningful relationship between the use of AI-powered tools particularly the ChatGPT voice chat feature and pronunciation development among EFL learners at the university level. Overall the evidence suggests that AI-mediated feedback contributes to positive pronunciation gains however its effectiveness varies depending on the linguistic feature targeted, the instructional context and learners' engagement with the tool. This section discusses the major themes that emerged from the findings while comparing them with relevant prior research to provide a deeper interpretation of the relationship between ChatGPT voice interaction and pronunciation improvement.

The first major theme concerns the generally positive influence of AI-based tools on learners' pronunciation accuracy. Several studies including those by Dennis (2024), Sun (2023) and Bashori et al. (2024) demonstrate consistent improvements in segmental pronunciation features such as consonant clarity and vowel accuracy, when learners engage with speech recognition based systems. These findings align with the results summarized in this study, reinforcing the argument that automated, real time feedback allows learners to identify phonetic errors as they occur and immediately attempt correction. This aligns with Fathi et al. (2024) who highlight that AI-mediated interactions can increase learners' willingness to practice speaking which indirectly enhances pronunciation performance. The consistency across these studies indicates that AI tools, including ChatGPT voice chat, provide valuable support for self-correction and phonetic refinement by simulating an interactive language partner that offers instantaneous response an aspect that traditional classroom settings may not always provide (Abdulhussein, 2025).

The findings also reveal that pronunciation gains achieved through ChatGPT or similar AI tools tend to be less stable and less substantial compared to improvement in other aspects of speaking proficiency such as grammar, fluency, or comprehension. The work of Nhu (2024) for example found only modest and inconsistent pronunciation improvements despite a structured eight-week AI-based conversation training program. This outcome closely mirrors earlier findings from Sun (2023) who emphasized that pronunciation gains are more significant when ASR based tools are integrated into structured instructional

settings rather than used independently. When comparing these results, it becomes evident that while ChatGPT's voice chat feature can facilitate pronunciation practice, it may not sufficiently address the deeper phonological dimensions required for long term improvement including suprasegmental features such as intonation, rhythm and stress patterns. These findings are also consistent with the conclusions of Mompean (2024) who argues that although ChatGPT can model pronunciation and provide phonetic explanations, its ability to evaluate and correct suprasegmental elements remains limited. Both the present findings and prior research converge on the understanding that AI tools excel more in supporting segmental features but continue to face challenges in addressing prosodic complexity.

A third important theme relates to learners' perceptions and their effect on pronunciation outcomes. The findings indicate that students generally view ChatGPT as a practical, motivating and accessible tool for pronunciation training. This is supported by studies from Lan (2025) and Hoang et al. (2023) which consistently show that learners appreciate the flexibility, immediacy and low-pressure environment created by ChatGPT based or chatbot mediated practice. These affective benefits are crucial, as speaking and pronunciation are commonly associated with anxiety among EFL learners. Bashori et al. (2024) further demonstrate that ASR based practice environments can reduce learners' speaking anxiety and increase language enjoyment, ultimately fostering more sustained engagement with pronunciation tasks. When considered alongside the current findings, these studies suggest that one of the strongest contributions of ChatGPT voice chat lies not only in its corrective ability but also in its capacity to create an emotionally supportive learning environment that encourages repeated practice an essential component of pronunciation development.

Despite these benefits, the findings clearly show that learners still prefer human instructors for pronunciation learning, particularly for identifying individual phonetic challenges and providing empathetic, nuanced feedback. Lima and Wallace (2024) emphasize that teachers remain irreplaceable in addressing pronunciation problems because they possess the ability to detect subtle articulatory issues, understand learner-specific difficulties, and tailor explanations to the learner's needs. The present findings align with this view: although ChatGPT is seen as a useful supplementary tool, students do not perceive it as a replacement for teacher instruction. This tendency reflects the broader consensus in the literature that AI tools serve best as assistants within the learning process rather than standalone solutions. Mompean (2024) similarly concludes that AI-based pronunciation practice should complement, not replace, teacher led instruction. Therefore, integrating ChatGPT within a blended learning model appears to be the most pedagogically sound approach ensuring that learners

receive both immediate, automated feedback and deeper, human mediated corrective guidance.

Another point of comparison emerges when considering learner autonomy and self-regulated learning. Studies by Wei (2023) and Liu et al. (2025) emphasize that AI-powered language learning tools enhance learners' self-regulation and intrinsic motivation, which has direct implications for pronunciation improvement. The current findings support this perspective, demonstrating that learners frequently use ChatGPT independently for pronunciation practice, thereby strengthening their learning discipline and developing long-term learning strategies. This is particularly important in pronunciation instruction where improvement depends heavily on frequent, consistent practice more than in other linguistic skills. ChatGPT provides learners with the opportunity to practice without time constraints enabling them to work at their own pace and revisit challenging phonetic elements repeatedly. This aligns well with the principles of autonomous learning and supports the broader trend toward personalized, technology enhanced language learning environments.

The findings highlight the importance of structured pedagogical integration to maximize the effectiveness of ChatGPT voice chat for pronunciation development. Sun (2023) and Abdelhalim & Alsehibany (2025) show that AI tools produce the strongest pronunciation gains when incorporated into systematic instructional designs supported by clear learning objectives, teacher guidance, and targeted practice activities. Comparatively, independent or unstructured use tends to yield inconsistent results especially for suprasegmental features. The findings from this study reinforce this pattern ChatGPT is most effective when learners understand how to use the tool purposefully and when its use is combined with teacher-led pronunciation training, explicit modeling and guided practice. Such integration ensures that learners receive both automatic and human feedback, benefiting from the strengths of each source. These comparisons show that the relationship between ChatGPT voice chat and pronunciation development is neither linear nor dependent on a single factor. Instead, improvement is shaped by multiple interacting variables the type of pronunciation feature practiced, the quality of AI feedback, learner motivation, the learning context and the degree of teacher involvement. The findings align with and extend the existing body of research, illustrating that while ChatGPT voice chat can support segmental pronunciation improvement and motivate learners through accessible practice its effect is more modest for prosodic features and requires structured pedagogical support to be fully effective.

## **CONCLUSION**

The objective of this study was to determine whether the use of the ChatGPT voice chat feature correlates with improvements in pronunciation among

university level EFL learners. Based on the synthesis of selected literature, it can be concluded that ChatGPT voice interaction contributes positively to pronunciation development, particularly in enhancing segmental features such as consonant and vowel accuracy through immediate, automated feedback. Learners benefit from the accessibility, flexibility and low-pressure practice environment provided by the tool, which encourages repeated pronunciation attempts and fosters greater speaking confidence. The relationship between ChatGPT usage and pronunciation improvement is not uniformly strong across all pronunciation dimensions. While segmental gains are consistently observed, suprasegmental features such as intonation, rhythm, and stress show limited improvement indicating that AI feedback alone cannot fully address the more complex aspects of phonological competence. The findings also show that learners' progress is strongly influenced by pedagogical conditions ChatGPT voice chat is most effective when integrated into structured instruction supported by teacher guidance rather than being used independently. The study concludes that the ChatGPT voice chat feature has meaningful but partial effectiveness in improving pronunciation. It serves as a supportive tool that enhances practice quality and learner motivation, yet it cannot replace the depth of correction and personalized feedback offered by human instructors. The correlation between ChatGPT voice chat usage and pronunciation improvement is positive but conditional stronger when complemented by teacher-led instruction and strategic learning design and more limited when used as the sole method of pronunciation training.

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