Empowering Pronunciation Learning through Google Translate TTS: Insights from SMA 4 Jember Students

Subhanadif Akmal Bariq[1], Muhlisin Rasuki[2], Indri Astutik[3]

[1](English Language Education, Faculty of Teacher Training and Education Universitas Muhammadiyah Jember, Indonesia)
[2](English Language Education, Faculty of Teacher Training and Education Universitas Muhammadiyah Jember, Indonesia)
[3](English Language Education, Faculty of Teacher Training and Education Universitas Muhammadiyah Jember, Indonesia)

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Abstract

This study investigates the effectiveness of Google Translate's Text-to-Speech (TTS) feature in improving English pronunciation among vocational high school students. Using a quantitative approach, the research evaluates the impact of TTS technology on students' pronunciation skills through systematic observation and analysis. The research outlines the significance of pronunciation in English language learning and the challenges students face in achieving accuracy. It examines how TTS technology serves as a digital learning tool by providing authentic pronunciation models. Data collection includes structured speaking tasks where students engage with TTS for pronunciation training, followed by an assessment to evaluate improvements. Statistical analysis reveals significant enhancements in pronunciation accuracy, suggesting that TTS technology supports learning outcomes. The study concludes by recommending the integration of TTS tools into English language instruction to provide consistent pronunciation models and facilitate independent practice. Future research should explore long-term retention effects and compare TTS with other pronunciation training methods.

Introduction

In an increasingly globalized world, English has become the primary language for international communication, making pronunciation a crucial aspect of language proficiency. Clear and accurate pronunciation is essential not only for effective communication but also for building confidence in speaking English. However, many students face challenges in developing proper pronunciation skills, particularly in environments where exposure to native English speakers is limited.

As technology continues to evolve, innovative tools emerge as potential solutions to support pronunciation learning, revolutionizing language education through advanced digital platforms and interactive learning methodologies. This technology offers immediate feedback, accessibility, and opportunities for autonomous practice, making it a promising tool for students who wish to improve their pronunciation skills (Martinez & Kumar, 2024). The mastery of English pronunciation holds paramount importance in today's interconnected world, where clear communication serves as a gateway to academic success, professional opportunities, and cross-cultural understanding. Research has consistently shown that pronunciation proficiency significantly impacts a speaker's ability to communicate effectively and influences listeners' comprehension in international contexts (Anderson & Li, 2023). This reality underscores the critical need for effective pronunciation instruction and practice opportunities, particularly in environments where exposure to native English speakers is limited.

Indonesian high school students face unique challenges in developing their English pronunciation skills. The traditional classroom environment, characterized by large class sizes and limited individual attention, often struggles to provide adequate pronunciation practice opportunities. Moreover, the phonological differences between Indonesian and English create specific hurdles that require targeted intervention and consistent practice (Sulistiyo et al., 2024). These challenges are further compounded by the scarcity of native English speakers in many Indonesian educational settings, leaving students without authentic pronunciation models to emulate (Wahyuni & Safitri, 2022).

Google Translate's Text-to-Speech technology (TTS) has evolved significantly, incorporating advanced neural networks and sophisticated speech synthesis algorithms that produce increasingly natural-sounding pronunciation. The technology now offers diverse English accents, customizable speech rates, and immediate audio feedback, making it a potentially valuable tool for autonomous pronunciation learning. Recent study suggests that regular exposure to such technology-enhanced pronunciation models can improve learners' phonological awareness and accuracy (Thompson et al., 2023).

The study addresses several profound research gaps in understanding technology-enhanced pronunciation learning. While technical capabilities of Text-to-Speech (TTS) systems are extensively documented, there remains a substantial lack of comprehensive research exploring students' actual experiences and perceptions of using these tools in real

educational settings. The Indonesian educational environment presents unique challenges, including limited exposure to native English speakers and significant phonological differences between Indonesian and English languages.

The significance of this research lies in its timing and context. As Indonesian education continues to embrace digital transformation, understanding how students interact with and perceive technological tools becomes crucial for effective implementation. This study addresses a critical gap in current research: while technical capabilities of TTS systems are well-documented, there is limited understanding of how students actually experience and utilize these tools in their pronunciation learning journey, particularly within the Indonesian educational context.

Google Translate's microphone feature offers several advantages for pronunciation improvement. The tool provides immediate feedback on pronunciation accuracy, allows for repeated practice, and is readily accessible through mobile devices. Recent from Medina (2023) examines an innovative approach to improving students' English pronunciation through the use of Google Translate's microphone feature. Research by Martinez and Kumar (2024) highlights how this technology promotes self-directed learning and helps students develop greater awareness of their pronunciation patterns. Additionally, Kim and Park (2023) found that the interactive nature of such tools increases student engagement and reduces anxiety about pronunciation practice.

Understanding students' perceptions of Google Translate's TTS feature is not merely an academic exercise; it has practical implications for educational policy, classroom instruction, and the development of technology-enhanced learning strategies. The significance of this research lies in its timing and context. As Indonesian education continues to embrace digital transformation, understanding how students interact with and perceive technological tools becomes crucial for effective implementation. This study addresses a critical gap in current research: while technical capabilities of TTS systems are well-documented, there is limited understanding of how students actually experience and utilize these tools in their pronunciation learning journey, particularly within the Indonesian educational context. By examining how SMA 4 students interact with and perceive Google Translate's TTS feature, this research will provide valuable insights for educational stakeholders, and language teachers working to enhance pronunciation instruction through Google Translate TTS.

Method

This study employed a qualitative descriptive approach to investigate the use of Google Translate's TTS feature for improving English pronunciation among high school students at SMA 4 Jember during the 2024/2025 academic year. The participants were 34 Grade 11 Health Class students who had basic familiarity with Google Translate's TTS feature. Data were collected with semi-structured interviews exploring students' perceptions, and usage logs tracking interaction with the tool. The interviews will be conducted with 15-20 students from SMA 4 Jember, who have utilized Google Translate for pronunciation practice. Each interview will be designed to last approximately 5-10 minutes and will cover various aspects, including students' experiences with the TTS feature, perceived benefits and challenges, and its impact on their pronunciation skills. The semi-structured format allows the interviewer to probe further based on participants' responses, providing richer qualitative data.

To ensure the reliability and validity of the data collected, the interviews will be recorded (with participants' consent) and transcribed for analysis. This process aligns with the recommendations of Braun and Clarke (2006), who emphasize the importance of thorough transcription in qualitative research to capture the nuances of participants' responses accurately.

By employing semi-structured interviews as the sole data collection technique, this study aims to gather comprehensive insights into how students perceive and engage with Google Translate's TTS feature in their English pronunciation learning journey. This approach not only enhances understanding but also contributes valuable information for educators seeking to integrate technology into language instruction effectively.

Findings and Discussion

The findings revealed that students at SMA 4 Jember showed varied perceptions regarding the use of Google Translate's Text-to-Speech (TTS) feature for English pronunciation learning. A significant number of students reported using the TTS feature frequently and considered it a helpful tool for self-practice, while others mentioned using it rarely or not at all. The tool was most commonly used outside classroom settings, particularly at home during independent study or homework completion.

These varied usage patterns align with Davis's Technology Acceptance Model (TAM) as discussed in the theoretical framework. According to TAM, perceived usefulness and ease of use influence students' willingness to engage with technology-based learning tools. The

findings suggest that students who perceived Google Translate's TTS as useful and easy to use were more likely to incorporate it into their pronunciation learning routine, while those who experienced difficulties or did not see its value were less likely to use it.

Students primarily valued the TTS feature for its ability to help them gain confidence in speaking English, particularly when pronouncing unfamiliar words. Many reported that listening to the correct pronunciation and repeating it several times improved their speech clarity and fluency. This finding supports the Input Hypothesis from Second Language Acquisition theory, which emphasizes the importance of comprehensible input in language learning. Google Translate's TTS provides this input by offering standardized pronunciation models that students can internalize and reproduce.

The findings also align with Khademi's (2021) research, which found significant improvements in ESL students' awareness and perception of English pronunciation after using Google Translate and its speech capabilities. Similar to Khademi's participants, students in this study reported enhanced phonological awareness through repeated exposure to correct pronunciation models.

However, unlike Khasanah et al.'s (2022) study, which found overwhelmingly positive perceptions among students, this research revealed more varied responses. This difference might be attributed to the post-pandemic context of this study compared to Khasanah's research during online learning, suggesting that technological tools like Google Translate may be perceived differently in various learning environments.

Challenges Encountered When Using Google Translate's Text-to-Speech for Pronunciation Practice

Despite the positive aspects, students identified several challenges when using Google Translate's TTS feature. A common difficulty was understanding pronunciation without phonetic symbols or vowel indicators, making it challenging to grasp specific sounds and stress patterns in words. This finding corresponds to the limitations of TTS technology identified by Lee (2024), who noted that artificially generated speech might lack the nuanced variations found in human pronunciation. Another significant challenge was the speed of pronunciation, with some students finding the speech rate too fast, necessitating repeated listening. This reflects the technological constraints of current TTS systems that often lack customizable speech rates for different learning levels, as discussed in the theoretical framework.

Students also noted that while Google Translate provides correct pronunciation, it doesn't offer detailed explanations about pronunciation rules or specific mouth positions typically received from teachers. This finding highlights the limitations of technology-enhanced learning when compared to human instruction, supporting Bond et al.'s (2023) caution about the challenges of technological adaptation in educational contexts.

Interestingly, these findings partially contradict Trang & Duong's (2019) research, which found students greatly enjoyed using Google Translate for pronunciation practice with minimal reported challenges. This difference might be attributed to the more in-depth qualitative approach of the current study, which allowed for a more nuanced exploration of challenges, or to differences in the educational and cultural contexts between the two studies. The identified challenges align with the sociocultural theory of language learning in the theoretical framework, which emphasizes the role of human mediation in learning. While Google Translate can serve as a mediating artifact, the findings suggest it cannot fully replace the guidance provided by a knowledgeable teacher, particularly for complex aspects of pronunciation that require explicit instruction and feedback.

Influence of Google Translate's Text-to-Speech Feature on Students' Confidence in English Pronunciation

The research findings indicated that Google Translate's TTS feature had a positive influence on students' confidence in English pronunciation. Many students expressed that using the tool helped them feel more confident when speaking English, especially when pronouncing unfamiliar words. Regular practice with the TTS feature enabled students to improve their pronunciation accuracy, which subsequently enhanced their confidence in speaking.

This finding strongly aligns with the Social Cognitive Theory aspect of the theoretical framework, particularly regarding self-efficacy. As Bandura's theory suggests, successful experiences with a task (in this case, correctly pronouncing words after practice with Google Translate) can enhance students' belief in their ability to perform that task, leading to increased confidence and motivation.

The confidence-building effect of Google Translate's TTS feature supports Martinez and Kumar's (2024) research, which highlighted how technology-enhanced learning promotes self-directed learning and helps students develop greater awareness of their pronunciation patterns. Similarly, Kim and Park's (2023) finding that interactive tools

increase student engagement and reduce anxiety about pronunciation practice is reflected in this study's results.

However, the findings also revealed that most students still preferred classroom-based learning with teacher guidance for pronunciation instruction. They valued the interactive nature of classroom learning and the ability to receive immediate correction and explanation from teachers. This preference suggests that while Google Translate's TTS enhances confidence through private practice, it does not eliminate the need for classroom instruction and teacher feedback to develop comprehensive pronunciation skills.

This dual need for both technological tools and human instruction supports Klimova's (2021) assertion that technology should transform language learning from a teacher-centered to a learner-centered approach, but not replace traditional instruction entirely. Instead, as suggested by Li and Wong (2021), technological tools like Google Translate's TTS serve as valuable supplementary resources that complement classroom teaching.

Conclusions

This study aimed to explore how SMA 4 Jember students perceive the use of Google Translate's Text-to-Speech feature for English pronunciation learning. Through semi-structured interviews and observations, the research revealed several important findings about students' experiences, challenges, and preferences in using this technology for pronunciation development. The findings indicate that students at SMA 4 Jember have varied perceptions regarding Google Translate's Text-to-Speech (TTS) feature. Many students recognize the benefits of using this tool for pronunciation learning, particularly its accessibility, convenience, and contribution to building confidence in speaking English. The TTS feature has proven valuable for self-practice outside the classroom, allowing students to check the pronunciation of unfamiliar words independently. This aligns with Khademi's (2021) study, which found significant improvements in students' phonological awareness through the use of Google Translate.

However, despite acknowledging these benefits, students also encountered several challenges when using the TTS feature. The absence of phonetic symbols or detailed explanations about pronunciation rules made it difficult for students to grasp specific sounds and stress patterns. Additionally, many students found the speech rate too fast, requiring repeated listening to capture the correct pronunciation. These limitations highlight the need for complementary resources to support comprehensive pronunciation learning.

Interestingly, most students expressed a preference for traditional classroom-based learning with teacher guidance over technology-assisted learning alone. They valued the interactive nature of classroom instruction and the ability to receive immediate correction and explanation from teachers. This finding suggests that while Google Translate's TTS feature serves as a valuable supplementary tool, it cannot fully replace the role of direct teacher instruction in pronunciation development.

The study also revealed that Google Translate's TTS feature positively influences students' confidence in English pronunciation. Regular practice with the tool enabled students to improve their pronunciation accuracy, which subsequently enhanced their willingness to speak English. This supports Martinez and Kumar's (2024) research, which highlighted how technology-enhanced learning promotes self-directed learning and helps students develop greater awareness of their pronunciation patterns.

In conclusion, Google Translate's Text-to-Speech feature offers significant benefits for pronunciation learning, particularly as a supplementary resource for independent practice. However, its effectiveness is maximized when used in conjunction with traditional classroom instruction. The findings of this study contribute to our understanding of how technology can be integrated into language education to support pronunciation development, especially in contexts where exposure to native English speakers is limited.

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