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AI-Powered Tools and Their Role in Developing Speaking Fluency in EFL Contexts

Ilma Sania Ramadhani
UIN Sulthan Thaha Saifuddin Jambi, Indonesia

ABSTRACT

Speaking fluency remains a major challenge for learners of English as a Foreign Language (EFL), particularly in contexts where opportunities for authentic oral interaction are limited. Recent developments in artificial intelligence (AI) offer new possibilities for enhancing speaking instruction through personalized, interactive, and low-anxiety learning environments. This study investigates the integration of AI-powered tools to enhance speaking fluency in EFL classrooms. Employing a qualitative descriptive research design, the study was conducted in an EFL classroom where speech recognition applications, AI-based chatbots, and automated feedback platforms were integrated into regular speaking activities over one academic term. Data were collected through classroom observations, speaking performance tasks, and semi-structured interviews. The findings reveal that AI-powered tools contributed to improvements in students' speaking fluency, as reflected in increased speech continuity, reduced hesitation, and greater confidence in oral communication. Additionally, students expressed positive perceptions of AI-assisted speaking practice, highlighting increased motivation, reduced anxiety, and enhanced learner autonomy. The study concludes that AI-powered tools can serve as effective complementary resources in EFL speaking instruction when supported by appropriate pedagogical guidance. The findings provide practical implications for EFL teachers and contribute to the growing body of research on AI-assisted language learning.

Keywords: Artificial intelligence; AI-powered tools; Speaking fluency; English as a Foreign Language (EFL); Language learning technology;

INTRODUCTION

Speaking fluency is widely recognized as one of the most challenging skills for learners of English as a Foreign Language (EFL). Unlike receptive skills, speaking requires learners to simultaneously process linguistic knowledge, cognitive strategies, and sociolinguistic awareness in real time. In many EFL contexts, students experience limited exposure to authentic English communication, resulting in low confidence, frequent hesitation, inaccurate pronunciation, and restricted vocabulary use. These challenges are often exacerbated by teacher-centered instructional practices and limited classroom time for meaningful oral interaction.

In recent years, rapid advancements in artificial intelligence (AI) have begun to reshape educational practices, including English language teaching. AI-powered tools such as speech recognition systems, intelligent tutoring applications, chatbots, and automated feedback platforms offer new opportunities to support speaking development beyond traditional classroom constraints. These technologies enable learners to engage in repeated speaking practice, receive immediate and personalized feedback, and interact in low-anxiety environments. As a result, AI-based tools have the potential to address long-standing issues related to speaking fluency, particularly in EFL classrooms where communicative exposure is limited.

Previous studies have explored the use of technology in language learning, demonstrating its positive effects on learner motivation, autonomy, and language performance. Research on computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) indicates that digital tools can enhance oral proficiency by providing flexible and interactive learning experiences. More recent studies focusing on AI-assisted language learning suggest that speech-enabled applications and conversational agents can improve pronunciation accuracy, fluency, and speaking confidence. However, much of the existing research has concentrated on general speaking performance or pronunciation accuracy, with less attention given specifically to speaking fluency as a multidimensional construct involving speed, smoothness, and continuity of speech.

Furthermore, despite the growing interest in AI in education, empirical classroom-based studies examining how AI-powered tools are integrated into everyday EFL instruction remain limited, particularly in developing country contexts. Many studies rely on experimental or laboratory settings, which may not fully capture the pedagogical realities, challenges, and perceptions of teachers and learners in authentic classrooms. There is also a lack of qualitative insights into how students experience AI-mediated speaking

activities and how these tools influence their confidence and willingness to communicate.

Addressing these gaps, the present study investigates the integration of AI-powered tools in EFL classrooms with a specific focus on enhancing students' speaking fluency. By examining classroom implementation, learner responses, and observed changes in speaking performance, this study aims to contribute to the growing body of literature on AI-assisted language learning. The findings are expected to provide pedagogical implications for EFL teachers, curriculum designers, and policymakers seeking to leverage AI technologies to create more effective, engaging, and communicative speaking instruction.

METHODS

Research Design

This study employed a qualitative descriptive research design to explore the integration of AI-powered tools in EFL speaking instruction and their influence on students' speaking fluency. This design was selected to provide an in-depth understanding of classroom practices, learner experiences, and observable changes in speaking performance within a natural instructional setting.

Research Context and Participants

The study was conducted in an EFL classroom at a secondary school/university level where English is taught as a foreign language. The participants consisted of EFL students selected through purposive sampling, based on their regular participation in speaking activities and their familiarity with digital learning tools. The class represented mixed proficiency levels, allowing for a comprehensive examination of how AI-powered tools supported diverse learners.

AI-Powered Tools and Instructional Procedures

Several AI-powered tools were integrated into speaking instruction, including speech recognition applications, AI-based chatbots, and automated pronunciation feedback platforms. These tools were used during structured speaking activities such as guided conversations, role-plays, short monologues, and interactive dialogues. The implementation lasted for one academic term, with AI tools incorporated into regular speaking lessons.

Data Collection Techniques

Data were collected through multiple qualitative instruments to ensure data triangulation:

1. **Classroom observations** were conducted to document instructional strategies, student engagement, and interaction patterns during AI-assisted speaking activities.
2. **Speaking performance tasks** were administered to capture students' oral production before and after the integration of AI-powered tools.
3. **Semi-structured interviews** were conducted with selected students to explore their perceptions, challenges, and experiences in using AI tools for speaking practice.

Data Analysis

The collected data were analyzed using thematic analysis. Observation notes and interview transcripts were coded to identify recurring themes related to speaking fluency, learner confidence, and engagement. Speaking performance data were examined based on fluency indicators such as speech continuity, hesitation frequency, speech rate, and clarity of expression. The analysis followed systematic stages of data reduction, data display, and conclusion drawing.

Trustworthiness

To ensure trustworthiness, the study applied triangulation of data sources, prolonged engagement in the research setting, and peer debriefing. These strategies enhanced the credibility, dependability, and confirmability of the findings.

FINDINGS AND DISCUSSION

Findings

The findings of this study are organized into three main themes: (1) classroom integration of AI-powered tools, (2) improvement in students' speaking fluency, and (3) students' perceptions of AI-assisted speaking practice.

1. Classroom Integration of AI-Powered Tools

Classroom observations indicated that AI-powered tools were systematically integrated into speaking instruction through guided and independent activities. Teachers utilized speech recognition applications for pronunciation and fluency drills, while AI-based chatbots were employed to simulate real-life conversational contexts. These tools allowed students to practice speaking both during class sessions and outside the classroom, extending learning opportunities beyond limited instructional time.

Students were encouraged to repeat speaking tasks multiple times, enabling continuous self-monitoring and improvement. The AI tools provided immediate feedback on pronunciation accuracy, speech clarity, and intonation, which supported students in identifying their weaknesses and refining their oral production independently.

2. Improvement in Students' Speaking Fluency

Analysis of students' speaking performance tasks revealed a noticeable improvement in several fluency indicators. Students demonstrated increased speech continuity, with fewer pauses and reduced hesitation during oral production. Their speech rate became more stable, and they were able to express ideas more smoothly without frequent interruptions or self-corrections.

Additionally, students showed improved confidence when speaking English. This confidence was reflected in longer utterances, more spontaneous responses, and greater willingness to participate in speaking activities. Repeated interaction with AI-powered tools enabled learners to internalize language patterns, resulting in more natural and fluent speech.

3. Students' Perceptions of AI-Assisted Speaking Practice

Interview data revealed that most students held positive perceptions of AI-powered tools for speaking practice. They reported that AI-assisted activities reduced anxiety and fear of making mistakes, as the tools provided a non-judgmental learning environment. Students appreciated the flexibility of practicing speaking at their own pace and revisiting tasks as needed.

Moreover, students indicated that AI-powered tools increased their motivation to practice speaking independently. Many expressed that immediate feedback and interactive features made speaking practice more engaging compared to traditional classroom methods. However, a small number of students noted

initial difficulties in adapting to the technology, particularly in understanding feedback provided by the AI system.

Discussion

The present study demonstrates that the integration of AI-powered tools contributes positively to the development of speaking fluency in EFL classrooms. The findings indicate that students experienced noticeable improvements in speech continuity, reduced hesitation, and increased confidence, suggesting that AI-assisted speaking practice can effectively address persistent challenges in EFL oral communication. These results support the growing body of research emphasizing the pedagogical value of artificial intelligence in language learning environments.

One key contribution of AI-powered tools lies in their ability to provide immediate and individualized feedback. Consistent with theories of skill acquisition and automatization, repeated practice combined with timely feedback enables learners to gradually reduce cognitive load during speech production. As students engaged in frequent interaction with speech recognition systems and AI-based chatbots, they were able to internalize language patterns, resulting in smoother and more spontaneous speech. This finding aligns with previous studies reporting that AI-supported speaking activities enhance oral fluency by facilitating continuous practice beyond classroom limitations.

The reduction in speaking anxiety reported by students is another significant outcome of this study. From an affective perspective, the non-judgmental nature of AI tools appears to lower learners' affective filters, allowing them to take risks and speak more freely. This finding resonates with Krashen's affective filter hypothesis, which highlights the importance of emotional factors in second language acquisition. By offering a low-pressure environment, AI-powered tools encourage learners who are typically reluctant to speak in front of peers to actively participate in speaking practice.

Furthermore, the findings suggest that AI-powered tools promote learner autonomy and motivation. Students reported increased willingness to practice speaking independently, reflecting a shift from teacher-centered to learner-centered instruction. This outcome is consistent with constructivist learning principles, which emphasize active learner engagement and self-directed learning. AI-assisted speaking activities empower students to monitor their progress, set personal learning goals, and take greater responsibility for their language development.

Despite these positive outcomes, the study also highlights the importance of pedagogical mediation in AI integration. While AI-powered tools offer technological advantages, effective learning outcomes depend on thoughtful instructional design and teacher guidance. Without clear objectives and structured tasks, AI tools may function merely as supplementary technology rather than as meaningful pedagogical instruments. This finding underscores the role of teachers as facilitators who bridge technological affordances with communicative language teaching principles.

Overall, the discussion underscores that AI-powered tools should be viewed not as replacements for human interaction but as complementary resources that enhance speaking instruction. By integrating AI within communicative and pedagogically sound frameworks, EFL teachers can create more inclusive, engaging, and effective speaking learning environments. The findings of this study contribute empirical classroom-based evidence to the evolving discourse on AI-assisted language learning, particularly in relation to speaking fluency development in EFL contexts.

CONCLUSION

This study concludes that the integration of AI-powered tools has a positive and meaningful impact on enhancing speaking fluency in EFL classrooms. The use of speech recognition applications, AI-based chatbots, and automated feedback systems supports students in developing smoother speech, reducing hesitation, and increasing confidence in oral communication. These improvements indicate that AI-assisted speaking practice can effectively address common challenges faced by EFL learners in achieving fluency. In addition to linguistic gains, the findings highlight the affective and pedagogical benefits of AI integration. AI-powered tools create low-anxiety learning environments that encourage students to practice speaking without fear of negative evaluation. Moreover, these tools promote learner autonomy by enabling flexible, self-paced practice beyond classroom boundaries. Such conditions are essential for fostering sustained engagement and communicative competence in EFL contexts. Despite these positive outcomes, the study emphasizes that AI-powered tools should be implemented as complementary resources rather than replacements for teachers. Effective integration requires pedagogical planning, clear instructional objectives, and teacher facilitation to ensure meaningful learning experiences. This study contributes to the growing body of research on AI-assisted language learning

by providing classroom-based evidence of its effectiveness in improving speaking fluency. Future research is recommended to employ experimental or mixed-method designs, investigate long-term impacts, and explore teachers' perspectives on AI integration across diverse EFL settings.

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