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Innovating College English Speaking Instruction through Generative AI: Insights into Pronunciation and Confidence Building

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Abstract: This qualitative study examines College English (CE) teachers' experiences and perceptions regarding the integration of generative artificial intelligence (AI) into vocational English-speaking instruction. The research focuses on how teachers use AI tools to create virtual dialogue scenarios and provide real-time feedback on students' pronunciation, while analyzing the influence of these tools on teaching practices and classroom dynamics. Data were collected through semi-structured interviews and focus group discussions with 15 teachers who have experience in AI-assisted teaching. A thematic analysis revealed significant insights into the pedagogical advantages and challenges associated with AI integration. The findings highlight AI's potential to enhance students' speaking skills while also addressing the practical difficulties teachers face in adopting AI. This study provides practical implications for educators seeking to incorporate AI tools in language teaching contexts.

1. Introduction

In recent years, the incorporation of advanced technologies into English language teaching has attracted considerable attention from both researchers and educators. Among these innovations, generative artificial intelligence (AI) stands out as a transformative tool, introducing novel possibilities for creating interactive learning environments and offering real-time feedback previously thought unattainable[1] (Bahroun et al., 2023). As AI technologies evolve, their potential to reshape English language instruction, particularly in the development of speaking skills, has become a critical area of inquiry.

Generative AI can produce human-like text and speech, creating opportunities for students to engage in virtual dialogue practice while receiving immediate, personalized feedback on their speaking performance[2] (Tai & Chen, 2024). This capability makes it a valuable asset in college English speaking instruction, where students frequently face challenges in developing fluency and confidence in communication. Despite its technological potential, relatively little is understood about how educators perceive and implement these tools in their teaching practices.

While existing studies have investigated the potential of generative AI in language teaching-particularly in speaking instruction[3] (Law, 2024) -the emphasis has typically been on the technological capabilities of AI tools, such as their ability to provide immediate feedback and create personalized learning experiences. However, a noticeable gap exists in the literature regarding how teachers, as key facilitators of the learning process, experience and perceive these technologies. Few studies have examined the practical challenges teachers encounter when integrating AI into their classrooms, nor have they deeply explored the pedagogical implications of this integration from the educators' perspective.

By focusing on teachers' teaching experiences, this study aims to offer a deeper understanding of the practical and pedagogical implications of integrating generative AI into college English speaking instruction. Specifically, this study seeks to address the following research questions:

1) How do university English teachers perceive the role of generative AI in improving speaking instruction?

2) What are the perceived benefits and challenges associated with integrating AI tools into teaching speaking skills?

3) How do AI-assisted technologies affect teachers' instructional strategies and classroom dynamics?

The findings of this study will provide valuable insights for educators, curriculum developers, and policymakers aiming to effectively integrate AI tools into language teaching practices.

2. Literature Review

Recent advancements in generative artificial intelligence (AI) have attracted growing attention within the field of language education. Numerous studies have examined the potential of generative AI to enhance language learning, particularly in speaking instruction. For instance, Almusaed et al. (2023) found that AI-driven tools can offer personalized feedback and generate virtual dialogue environments that foster student engagement[4]. Similarly, Fathi et al. (2024) observed that AI's capability to provide real-time pronunciation feedback can significantly enhance students' speaking accuracy[5]. While these studies underscore the technological capabilities of AI, they often overlook how educators perceive and incorporate these tools into their pedagogical practices.

Although these studies emphasize the technological benefits of generative AI in delivering real-time feedback and personalized practice materials, they predominantly focus on student outcomes and technical functionalities. A significant gap exists in the literature concerning the understanding of teachers' experiences and perceptions regarding the implementation of these AI tools in real-world classrooms. As Khukalenko, Kaplan-Rakowski and Iushina (2022) observe, the success of technology integration in education largely depends on educators' perceptions of its usability and relevance to their instructional goals[6]. This study aims to address this gap by investigating how university English teachers engage with generative AI tools and the challenges they face during the integration process.

Beyond the technical aspects of AI integration, recent studies have increasingly focused on examining the role of teachers in navigating new technologies. For instance, Park and Son (2022) highlight the importance of teacher readiness when adopting digital tools, observing that inadequate training and support can impede successful integration[7]. Similarly, Wang et al. (2021) examined how teachers' attitudes toward AI influence their adoption of AI-based learning tools, concluding that teachers who perceive AI as a complement to their instructional methods are more inclined to embrace its potential[8]. These studies suggest that understanding teachers' perspectives is crucial for the successful integration of AI, yet limited research exists on how university English teachers specifically experience and adapt to the use of generative AI in speaking instruction.

Despite its potential benefits, the use of generative AI in language classrooms presents several challenges. For example, Ng et al. (2023) caution that AI tools can overwhelm both students and teachers, particularly in the absence of clear guidelines on effectively integrating the technology into lessons[9]. Additionally, Alwaqdani (2024) argue that although AI can provide immediate feedback, it lacks the nuanced understanding that human teachers bring to language instruction, particularly in addressing students' emotional and cultural needs[10]. These challenges underscore the need to investigate how teachers navigate AI integration, adapt their instructional strategies, and identify the types of support required to fully harness AI's potential.

In summary, although the existing literature recognizes the potential of generative AI to enhance speaking instruction through real-time feedback and personalized learning experiences, it inadequately addresses the practical challenges faced by educators. Specifically, limited research exists on how university English teachers perceive and experience the integration of AI in their classrooms. This study aims to address this gap by examining teachers' experiences, perceptions, and attitudes toward generative AI, offering valuable insights into the pedagogical implications and practical challenges of AI-assisted language instruction.

3. Methodology

This study adopts a qualitative research design, utilizing a case study approach to examine university English teachers' experiences, perceptions, and attitudes toward integrating generative artificial intelligence (AI) into their speaking instruction. A qualitative approach is particularly appropriate for this research, as it enables an in-depth exploration of individual experiences and offers rich, contextualized insights into the complexities of technology adoption in educational contexts.

Data were collected through multiple qualitative methods, including semi-structured interviews and focus group discussions. Semi-structured interviews were conducted with 15 university English teachers who had experience integrating generative AI tools into their teaching. These interviews, each lasting approximately 45 minutes, provided flexibility in exploring individual experiences while ensuring consistency across key topics. Additionally, five focus group discussions were held, with each involving 5 to 6 participants. These discussions, each lasting 1.5 hours, facilitated collective reflections and deeper exploration of shared challenges and strategies for integrating AI into speaking instruction.

A purposive sampling strategy was employed to recruit participants for this study. A total of 15 university English teachers were recruited based on their experience with generative AI tools in English-speaking instruction. Participants were selected to ensure diversity in teaching experience, institution type, and familiarity with AI technologies. This diversity was essential for capturing a broad range of perspectives on the challenges and opportunities related to AI integration.

The data were analyzed using thematic analysis, guided by Braun and Clarke's (2006) six-phase framework for identifying, analyzing, and reporting themes within the data[11]. First, all interviews and focus group discussions were transcribed verbatim, followed by open coding to identify initial codes. These codes were subsequently grouped into broader categories through axial coding, and selective coding was then employed to develop the core themes that addressed the research questions. The thematic analysis process was iterative, allowing for continual comparison and refinement of themes as new data were integrated. NVivo software was utilized to assist in organizing and analyzing the qualitative data.

4. Data Collection and Findings

The data for this study were collected from semi-structured interviews and focus group

discussions with 15 CE teachers, all of whom had experience integrating generative AI tools into their English speaking instruction. The teachers shared their experiences of integrating generative AI into their English-speaking instruction, offering insights into both the benefits and challenges of utilizing AI tools in their classrooms. The analysis of the interviews and focus group discussions revealed three primary themes: Technological Familiarity and Acceptance, Pedagogical Impact, and Student Outcomes. Each of these themes was further divided into sub-themes, which offer a more granular understanding of the teachers' experiences with AI-assisted teaching.

1) Technological Familiarity and Acceptance: Teachers displayed varying levels of familiarity with and acceptance of generative AI technology. Based on the data, this theme can be broken down into two key sub-themes: Initial Hesitation and Gradual Acceptance.

● Initial Hesitation: Several teachers expressed concerns when they were first introduced to AI tools, particularly regarding the complexity of integrating these technologies into their existing teaching frameworks. One teacher commented, "At first, I was really skeptical. I thought it would take too much time to learn the AI tools, and I wasn't sure how it would fit into my usual lesson plans." This sentiment of hesitation was common, with many teachers citing concerns about the steep learning curve associated with new technology.

● Gradual Acceptance: Despite the initial reluctance, many teachers described a gradual acceptance and eventual enthusiasm for AI tools once they saw the tangible benefits for both themselves and their students. One participant remarked, "Once I got the hang of it, I realized how much time it saved me in giving feedback, especially on pronunciation. It also made the students more engaged." This sub-theme highlights that familiarity and confidence with the technology often improved over time, driven by positive classroom experiences.

2) Pedagogical Impact: The integration of AI into teaching practices had a profound effect on how lessons were structured and delivered. Teachers reported changes in both their instructional strategies and classroom management techniques, leading to more interactive and personalized learning experiences.

● Enhanced Feedback Mechanisms: Teachers praised AI tools for their ability to provide immediate, individualized feedback, particularly in areas like pronunciation and fluency. One teacher noted, "The AI gave instant feedback on pronunciation errors, which allowed students to self-correct in real-time. It's something that I couldn't always do efficiently in a large classroom setting." This was seen as a major pedagogical shift, as students were able to practice more autonomously, and the teacher's role shifted from providing constant correction to facilitating overall learning.

● Increased Student Engagement: Many teachers observed that AI-driven activities, such as dialogue simulations and role-playing exercises, increased student engagement. One teacher shared, "When students were interacting with AI characters, they seemed much more willing to practice speaking. It felt less intimidating for them than speaking in front of their peers." This finding suggests that AI can help lower affective barriers to language learning, making students feel more comfortable when practicing their speaking skills.

● Time Management: The teachers also reported that AI tools helped them manage class time more effectively. With AI handling repetitive tasks, such as basic pronunciation drills, teachers could focus on more complex instructional tasks. "I used to spend a lot of time going over the same mistakes with students," one teacher explained. "Now, the AI takes care of that, and I can concentrate on more advanced skills like discourse and fluency."

3) Student Outcomes: The teachers provided mixed feedback regarding the overall impact of AI on student outcomes. While many noted improvements in specific areas such as pronunciation and speaking confidence, others were more cautious about the long-term effectiveness of AI tools.

● Pronunciation and Fluency Improvement: A significant number of teachers reported that

students demonstrated notable improvements in their pronunciation and fluency after regularly using AI tools. One teacher said, "My students' pronunciation has improved drastically. The AI was able to catch errors I might have missed in a large class." The ability of AI to provide precise and immediate feedback was seen as a key factor in these improvements.

- Confidence in Speaking: Teachers also observed a boost in students' confidence when speaking English, especially during AI-driven activities. As one participant remarked, "Students were more willing to experiment with their language during AI simulations. They felt like they were in a safe environment where they could make mistakes and learn from them without feeling judged." This suggests that AI can create a low-stress environment for language practice, encouraging risk-taking and experimentation.
- Limitations in Personalization: Despite these successes, some teachers expressed concerns about AI's ability to fully meet the individual needs of all students. One teacher pointed out, "AI can give feedback on pronunciation, but it doesn't always understand the nuances of context or the emotional aspects of language learning. There are things that only a human teacher can address." This highlights a limitation of AI tools, which may lack the ability to provide the same level of personalized attention as a human instructor, particularly when it comes to higher-level skills like pragmatics and discourse management.

5. Conclusion and Discussion

This study highlights the transformative potential of generative AI in English-speaking instruction. The findings suggest that while many teachers initially hesitated to integrate AI into their classrooms, the majority ultimately recognized its value in improving students' pronunciation, fluency, and overall speaking confidence. This aligns with prior research, which demonstrates that AI tools significantly enhance language learning by providing real-time feedback and personalized practice, particularly in pronunciation and speaking accuracy[12] (Zou et al., 2023). Teachers reported that AI's ability to deliver immediate, personalized feedback significantly enhanced classroom engagement and reduced the time spent on repetitive tasks, such as correcting basic pronunciation errors. This shift allowed teachers to focus more on advanced skills and higher-level language tasks, optimizing the use of class time. According to Alwaqdani[10] (2024), AI's ability to automate routine feedback allows teachers to concentrate on more complex instructional tasks, positioning it as a valuable complement to traditional teaching methods.

One key insight from this study is the ability of AI tools to create more interactive and autonomous learning environments. Teachers observed that students felt less pressure when interacting with AI-powered systems, particularly during dialogue simulations. This low-pressure environment encouraged students to take risks in their language use, resulting in improved speaking confidence. Similar findings were reported by Chen[13] (2024), who noted that AI simulations reduce students' fear of making mistakes, thereby increasing their willingness to experiment with language. Additionally, teachers noted that AI tools fostered more personalized learning experiences by providing students with real-time feedback, which would be difficult to achieve in large or resource-limited classrooms. This mirrors Kim's (2024) findings, which emphasize the role of AI in delivering individualized feedback, even in settings where teacher attention is limited[14].

However, despite these clear advantages, teachers raised concerns regarding AI's limitation in addressing more complex, nuanced aspects of language learning. While AI was effective in providing feedback on mechanical issues such as pronunciation, it struggled to address deeper communicative competencies, including pragmatic language use and cultural sensitivity. Teachers emphasized that AI could not fully replace the emotional and contextual support offered by human instructors, particularly when providing personalized feedback in less structured or context-specific situations. As Ji & Ko (2023) highlight, while AI can augment language instruction, it lacks the ability to fully replicate the adaptive and empathetic responses of human educators[15]. These

findings suggest that AI should be viewed as a supplementary tool rather than a substitute for human instruction, particularly in language learning contexts where interpersonal interaction is essential.

While this study offers valuable insights into the integration of generative AI in English-speaking instruction, it is not without limitations. One significant limitation lies in the small sample size of 15 teachers, which restricts the generalizability of the findings to broader educational contexts. Additionally, the study primarily focused on educators who have already integrated AI into their teaching practices, potentially introducing a positive bias in their perceptions and experiences. This focus may overlook the challenges faced by teachers who are less familiar with or resistant to adopting AI technologies. As a result, the findings may not fully capture the diverse range of perspectives present across different teaching environments.

Given these limitations, future research could build upon this study by exploring the long-term effects of AI integration on students' language proficiency, particularly whether improvements in pronunciation and fluency are sustained over time. Additionally, further investigation is needed to examine how AI can be adapted to provide more contextually aware feedback, particularly in higher-order language skills such as discourse management and pragmatics. There is also a need to explore the role of AI in supporting inclusive learning environments, particularly in diverse educational contexts where access to technology may be limited. Addressing these areas can provide a more comprehensive understanding of AI's impact on language education and offer practical guidance for its integration in classrooms worldwide.

References

[1] Bahroun, Z., Anane, C., Ahmed, V., & Zacca, A. (2023). Transforming education: A comprehensive review of generative artificial intelligence in educational settings through bibliometric and content analysis. Sustainability, 15(17), 12983.

[2] Tai, T. Y., & Chen, H. H. J. (2024). Improving elementary EFL speaking skills with generative AI chatbots: Exploring individual and paired interactions. Computers & Education, 220, 105112.

[3] Law, L. (2024). Application of generative artificial intelligence (GenAI) in language teaching and learning: A scoping literature review. Computers and Education Open, 100174.

[4] Almusaed, A., Almssad, A., Yitmen, I., & Homod, R. Z. (2023). Enhancing student engagement: Harnessing "AIED"'s power in hybrid education-A review analysis. Education Sciences, 13(7), 632.

[5] Fathi, J., Rahimi, M., & Derakhshan, A. (2024). Improving EFL learners' speaking skills and willingness to communicate via artificial intelligence-mediated interactions. System, 121, 103254.

[6] Khukalenko, I. S., Kaplan-Rakowski, R., An, Y., & Iushina, V. D. (2022). Teachers' perceptions of using virtual reality technology in classrooms: A large-scale survey. Education and Information Technologies, 27(8), 11591-11613.

[7] Park, M., & Son, J. B. (2022). Pre-service EFL teachers' readiness in computer-assisted language learning and teaching. Asia Pacific Journal of Education, 42(2), 320-334.

[8] Wang, Y., Liu, C., & Tu, Y. F. (2021). Factors affecting the adoption of AI-based applications in higher education. Educational Technology & Society, 24(3), 116-129.

[9] Ng, D. T. K., Lee, M., Tan, R. J. Y., Hu, X., Downie, J. S., & Chu, S. K. W. (2023). A review of AI teaching and learning from 2000 to 2020. Education and Information Technologies, 28(7), 8445-8501.

[10] Alwaqdani, M. (2024). Investigating teachers' perceptions of artificial intelligence tools in education: potential and difficulties. Education and Information Technologies, 1-19.

[11] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative research in psychology, 3(2), 77-101.

[12] Zou, B., Guan, X., Shao, Y., & Chen, P. (2023). Supporting speaking practice by social network-based interaction in artificial intelligence (AI)-assisted language learning. Sustainability, 15(4), 2872.

[13] Chen, Y. C. (2024). Effects of technology-enhanced language learning on reducing EFL learners' public speaking anxiety. Computer Assisted Language Learning, 37(4), 789-813.

[14] Kim, J. (2024). Leading teachers' perspective on teacher-AI collaboration in education. Education and Information Technologies, 29(7), 8693-8724.

[15] Ji, H., Han, I., & Ko, Y. (2023). A systematic review of conversational AI in language education: Focusing on the collaboration with human teachers. Journal of Research on Technology in Education, 55(1), 48-63.