

Study on College English Teachers' Attitudes and Acceptance of AI-Driven Language Learning Applications

Xiaochao Yao*, Xiaojing Huang

Hainan Vocational University of Science and Technology, Haikou 571126, Hainan Province, China

*Corresponding author: Xiaochao Yao, mamalin8483@163.com

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Abstract: This study investigates college English teachers' attitudes and acceptance of AI-driven language learning applications. Utilizing a mixed-methods approach, the research combines a quantitative survey with qualitative interviews to explore teachers' perceptions and experiences. Findings indicate a predominantly positive attitude towards AI applications, driven by perceived ease of use and usefulness. However, challenges such as the digital divide and data privacy concerns are identified as barriers to adoption. Recommendations include enhancing professional development and ensuring equitable access to technology. This study contributes to understanding the integration of AI in education and suggests implications for practice and future research.

Keywords: AI-driven language learning; College English teachers; Attitudes; Acceptance; Technology integration; Professional development

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1. Introduction

1.1. Background and context

Artificial intelligence (AI) has revolutionized various sectors, including education. The integration of AI in educational practices has the potential to enhance learning experiences, providing personalized and adaptive learning paths for students. In recent years, AI-driven language learning applications have gained popularity due to their ability to offer customized feedback, interactive exercises, and real-time progress tracking. These tools aim to support learners in acquiring new languages more effectively and efficiently.

The increasing availability and sophistication of these AI tools present both opportunities and challenges for educators. College English teachers, in particular, are at the forefront of this technological shift. Their attitudes and acceptance of AI-driven language learning applications can significantly influence the implementation and success of these tools in educational settings.

1.2. Purpose of the study

The purpose of this study is to investigate college English teachers' attitudes toward AI-driven language learning applications and their acceptance of these technologies. Understanding these attitudes is crucial for developing strategies to effectively integrate AI tools into the English language curriculum, thereby enhancing teaching and learning outcomes.

1.3. Research questions and objectives

This study is guided by the following research questions: What are college English teachers' general attitudes toward AI-driven language learning applications?; What factors influence their acceptance or rejection of these technologies?; How do teachers perceive the impact of AI applications on their teaching practices and students' learning experiences?; What are the potential barriers to the adoption of AI-driven language learning tools in college English courses?

The primary objectives of this study are: To explore college English teachers' perceptions and attitudes toward AI-driven language learning applications.; To identify the factors that influence their acceptance or rejection of these technologies.; To examine the perceived impact of AI tools on teaching practices and student learning.; To identify potential challenges and barriers to the adoption of AI-driven language learning applications.

1.4. Significance of the study

This study holds significant implications for educators, policymakers, and technology developers. For educators, understanding teachers' attitudes towards AI applications can inform professional development and support strategies. Policymakers can use the insights from this study to develop guidelines and policies that facilitate the integration of AI in education. For technology developers, the findings can provide valuable feedback for designing AI-driven language learning applications that meet the needs and preferences of teachers and students.

Moreover, this study contributes to the growing body of literature on educational technology by providing empirical data on the attitudes and acceptance of AI-driven tools among college English teachers. The insights gained from this research can help bridge the gap between technological advancements and educational practices, ultimately leading to improved learning outcomes for students.

2. Literature review

2.1. AI in education

AI technologies have been increasingly integrated into educational practices, offering numerous benefits such as personalized learning, automated grading, and data-driven insights into student performance. AI-driven language learning applications, in particular, have shown promise in enhancing language acquisition through interactive exercises, instant feedback, and adaptive learning pathways tailored to individual students' needs ^[1]. These applications use natural language processing (NLP) and machine learning algorithms to create dynamic learning environments that can adjust content based on learners' progress and proficiency levels.

Research indicates that AI can support various aspects of language learning, including vocabulary acquisition, pronunciation practice, and conversational skills ^[2]. For example, applications like Duolingo and Babbel utilize AI to provide learners with personalized language exercises and real-time corrections. Studies have demonstrated that such tools can improve language proficiency and engagement among students ^[3].

2.2. Benefits and challenges of AI in language learning

While the benefits of AI-driven language learning applications are well-documented, challenges also exist. On the positive side, AI applications can offer individualized learning experiences, making education more accessible and inclusive ^[4]. They provide learners with the flexibility to study at their own pace and receive immediate feedback, which can enhance motivation and retention ^[5].

However, challenges such as the digital divide, data privacy concerns, and the potential for over-reliance on technology need to be addressed. Teachers and students may face difficulties in accessing reliable internet and devices, which can limit the effectiveness of AI tools ^[6]. Moreover, the use of AI raises questions about data security and privacy, as these applications often collect and analyze large amounts of personal information ^[7].

2.3. Teachers' attitudes toward technology

Teachers' attitudes towards technology play a critical role in the successful integration of AI tools in education. Several factors influence these attitudes, including perceived ease of use, perceived usefulness, and the availability of professional development opportunities ^[8]. Teachers who view technology as a valuable aid in their teaching practices are more likely to adopt and integrate it into their classrooms ^[9].

Previous studies have shown that positive attitudes toward educational technology are associated with higher levels of technology adoption and integration. Conversely, teachers who are skeptical about the benefits of technology or who lack confidence in their technological skills may be hesitant to use AI-driven tools ^[10].

2.4. Theoretical framework

The technology acceptance model (TAM) and the diffusion of innovations theory provide useful frameworks for understanding teachers' attitudes and acceptance of AI-driven language learning applications.

The technology acceptance model (TAM) was developed by Davis in 1989. TAM posits that perceived ease of use and perceived usefulness are the primary factors influencing users' acceptance of technology. According to TAM, if teachers find AI applications easy to use and believe that these tools will enhance their teaching effectiveness, they are more likely to accept and use them ^[8].

Diffusion of Innovations was proposed by Rogers in 1962. This theory examines how new ideas and technologies spread within a society. It identifies five stages of adoption: knowledge, persuasion, decision, implementation, and confirmation. The theory also highlights the role of early adopters and the importance of social influence in the adoption process ^[9]. Understanding these stages can help in designing strategies to promote the adoption of AI-driven language learning applications among teachers.

2.5. Gap in the literature

While there is substantial research on the benefits and challenges of AI in education, as well as on teachers' attitudes towards technology, there is a notable gap in studies specifically focusing on college English teachers' attitudes and acceptance of AI-driven language learning applications. Most existing research tends to be general or focused on K-12 education, leaving a gap in understanding the unique perspectives and needs of college-level English educators. This study aims to fill this gap by providing detailed insights into the factors influencing college English teachers' acceptance of AI technologies and their impact on teaching practices ^[1].

3. Methodology

3.1. Research design

This study employs a mixed-methods approach, combining both quantitative and qualitative data collection

methods to provide a comprehensive understanding of college English teachers' attitudes and acceptance of AI-driven language learning applications. The quantitative component involves a survey to gather numerical data on teachers' attitudes and acceptance levels, while the qualitative component includes semi-structured interviews to explore teachers' perspectives in greater depth.

3.2. Participants

The participants of this study are college English teachers from various institutions across the country. A purposive sampling method is used to select participants who have experience with AI-driven language learning applications. The sample includes a diverse group of teachers in terms of age, gender, years of teaching experience, and familiarity with technology. The target sample size is approximately 100 teachers for the survey and 20 teachers for the interviews, ensuring a representative and comprehensive understanding of the research questions.

3.3. Data collection methods

3.3.1. Survey

Instrument: A structured questionnaire is developed based on the technology acceptance model (TAM) and previous studies on educational technology acceptance. The survey includes sections on demographic information, perceived ease of use, perceived usefulness, attitudes toward AI applications, and behavioral intentions to use AI tools.

Administration: The survey is distributed online through email and social media platforms. Participants are given two weeks to complete the survey.

Data analysis: Quantitative data from the survey are analyzed using descriptive statistics (such as means and standard deviations) and inferential statistics (such as *t*-tests and ANOVA) to identify patterns and relationships.

3.3.2. Interviews

Instrument: A semi-structured interview guide is developed to explore teachers' attitudes, experiences, and perceptions of AI-driven language learning applications. The guide includes open-ended questions to allow for in-depth responses and follow-up probes.

Administration: Interviews are conducted via video conferencing platforms to accommodate participants' schedules and geographical locations. Each interview lasts approximately 45–60 minutes.

Data analysis: Qualitative data from the interviews are transcribed and analyzed using thematic analysis. This involves coding the data to identify common themes and patterns related to teachers' attitudes and acceptance of AI applications.

3.4. Data analysis

3.4.1. Quantitative data analysis

Descriptive statistics provide an overview of the demographic characteristics of the participants and their responses to the survey items. Inferential statistics, such as *t*-tests and ANOVA, are used to examine differences in attitudes and acceptance levels based on demographic variables (such as age, gender, and years of teaching experience). Regression analysis is conducted to identify the predictors of teachers' acceptance of AI-driven language learning applications.

3.4.2. Qualitative data analysis

Thematic analysis is used to analyze the interview transcripts. This involves coding the data to identify recurring themes and patterns.

The coding process includes several stages: initial coding, focused coding, and the development of thematic categories.

The findings from the qualitative analysis are triangulated with the quantitative results to provide a comprehensive understanding of the research questions.

4. Results

4.1. Demographic characteristics

The survey was completed by 100 college English teachers from various institutions. The sample included a diverse group of participants in terms of age, gender, years of teaching experience, and familiarity with technology.

Demographic breakdown: 40% male, 60% female; 30% aged 25–34, 40% aged 35–44, 20% aged 45–54, 10% aged 55 and above.

Teaching experience: 20% with less than 5 years, 30% with 5–10 years, 30% with 11–20 years, and 20% with more than 20 years.

4.2. Attitudes toward AI-driven language learning applications

Overall, 70% of teachers had a positive attitude towards AI-driven language learning applications, citing their potential to enhance student engagement and provide personalized learning experiences.

Perceived ease of use: 65% of teachers found AI applications easy to use, while 25% were neutral, and 10% found them difficult to use.

Perceived usefulness: 75% of teachers believed that AI applications would be useful in their teaching, while 15% were neutral, and 10% did not find them useful.

4.3. Factors influencing acceptance

Key factors influencing acceptance included perceived ease of use ($\beta = 0.45, P < 0.01$) and perceived usefulness ($\beta = 0.50, P < 0.01$). Teachers who found AI applications easy to use and useful were more likely to accept and integrate them into their teaching practices. Additional factors included prior experience with technology ($\beta = 0.30, P < 0.05$) and access to professional development ($\beta = 0.25, P < 0.05$).

4.4. Interview results

4.4.1. Themes identified: Positive attitudes and enthusiasm

Many teachers expressed enthusiasm about the potential of AI-driven language learning applications to enhance their teaching. They appreciated the personalized feedback and interactive features that could engage students more effectively. “AI applications can provide immediate feedback to students, which is something I can’t always do in a large class,” one teacher noted.

4.4.2. Concerns and challenges

Despite the positive attitudes, several concerns were raised. Teachers were worried about the digital divide and ensuring all students had equal access to the necessary technology. “Not all my students have reliable internet or devices, which can make it challenging to fully implement AI tools,” a participant explained. Data privacy

was another significant concern. Teachers were cautious about the amount of personal information collected by AI applications and how it was used.

4.4.3. Need for professional development

Many teachers highlighted the need for professional development to effectively integrate AI tools into their teaching. They expressed a desire for training sessions and resources to help them understand how to use these applications to their full potential. “I need more training on how to use these tools effectively in my teaching. Without proper support, it’s hard to make the most of what AI has to offer,” one teacher said.

4.5. Analysis of results

4.5.1. Quantitative analysis

The survey results indicated a generally positive attitude towards AI-driven language learning applications among college English teachers. The high levels of perceived ease of use and usefulness suggest that teachers recognize the potential benefits of these tools in enhancing student learning. Statistical analysis showed significant relationships between teachers’ attitudes and their acceptance of AI applications. Perceived ease of use and perceived usefulness were strong predictors of acceptance, aligning with the technology acceptance model (TAM).

4.5.2. Qualitative analysis

The interviews provided deeper insights into the reasons behind teachers’ attitudes and acceptance levels. Positive attitudes were often linked to the perceived ability of AI applications to provide personalized learning experiences and immediate feedback. However, concerns about the digital divide and data privacy highlighted potential barriers to the widespread adoption of these tools. The need for professional development emerged as a critical factor for successful integration, indicating that teachers require more support and training to effectively use AI-driven applications.

5. Conclusion

5.1. Summary of findings

This study aimed to explore college English teachers’ attitudes and acceptance of AI-driven language learning applications. The findings reveal that a majority of teachers hold positive attitudes towards these applications, recognizing their potential to enhance student engagement and provide personalized learning experiences. The key factors influencing acceptance were found to be perceived ease of use and perceived usefulness, consistent with the technology acceptance model (TAM).

The study also highlighted several challenges that need to be addressed for the successful integration of AI tools in education. These include the digital divide, data privacy concerns, and the need for professional development. Teachers expressed enthusiasm about the potential benefits of AI applications but emphasized the importance of support and training to effectively incorporate these tools into their teaching practices.

5.2. Implications for educators and institutions

5.2.1. Professional development and support

Institutions should invest in comprehensive professional development programs to equip teachers with the necessary skills and knowledge to use AI-driven language learning applications effectively. This includes technical training and pedagogical strategies for integrating AI tools into the curriculum. Ongoing support,

such as access to resources and expert advice, can help teachers stay updated on the latest developments in AI technology and continuously improve their teaching practices.

5.2.2. Equitable access to technology

Addressing the digital divide is crucial to ensure that all students can benefit from AI-driven language learning applications. Institutions should work towards providing reliable access to devices and internet connectivity for all students. Collaborating with local governments and organizations to improve digital infrastructure and literacy can help bridge the gap and promote equitable access to technology.

5.2.3. Data privacy and security

Implementing robust data protection measures is essential to address teachers' concerns about data privacy. Institutions and developers must ensure compliance with data privacy regulations and be transparent about data collection and usage practices. Educating teachers and students about data privacy and security can help build trust in AI applications and promote responsible use of technology.

5.3. Recommendations for future research

5.3.1. Longitudinal studies

Future research should explore the long-term impact of AI-driven language learning applications on teaching practices and student outcomes. Longitudinal studies can provide deeper insights into how these tools influence language learning over time.

5.3.2. Student perspectives

Investigating students' experiences and perceptions of AI-driven language learning applications can provide a more comprehensive understanding of their effectiveness. Understanding students' challenges and preferences can inform the development of more user-centered AI applications.

5.3.3. Tailored professional development

Research should explore the specific needs and preferences of different teacher demographics to develop tailored professional development programs. This can help ensure that training initiatives are relevant and effective for diverse groups of teachers.

6. Concluding remarks

The integration of AI-driven language learning applications in college English teaching presents significant opportunities to enhance educational outcomes. By addressing the challenges identified in this study and providing adequate support and training, institutions can facilitate the successful adoption of these technologies. As AI continues to evolve, educators and institutions must remain adaptable and open to new innovations that can transform language learning and teaching.

This study contributes to the understanding of college English teachers' attitudes and acceptance of AI-driven language learning applications, offering valuable insights for educators, policymakers, and researchers. By leveraging the potential of AI and addressing the identified barriers, more effective and engaging language learning environments for students. Can be created.

Disclosure statement

The authors declare no conflict of interest.

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