

A Study on the Effectiveness of Generative AI in University English Teaching

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Abstract: With the widespread application of domestic generative artificial intelligence in various industries, the in-depth implementation of education informatization has also gained new possibilities. This is no exception for university English teaching, which should focus on and ensure the effectiveness of generative artificial intelligence applications. The purpose of this research is to analyze the application effectiveness of generative artificial intelligence in university English teaching. Through literature analysis and case studies, it is found that challenges affecting application effectiveness inevitably arise in practice. Therefore, it is important to actively explore effective pathways to enhance application effectiveness. Consequently, the research concludes that universities and teachers should place a high emphasis on the application of generative artificial intelligence in university English teaching, continuously optimizing based on application effectiveness, and more effectively relying on generative artificial intelligence to improve the effectiveness of university English teaching, while reforming existing teaching models in the context of education informatization.

Keywords: Higher education; University English; English teaching; Artificial intelligence; Teaching innovation.

Online publication: August 26, 2025

1. Introduction

Generative artificial intelligence is an important branch formed after the development of artificial intelligence reaches a certain stage, mainly functioning to generate new content based on existing information. In practice, generative artificial intelligence can complete content generation based on given datasets or prompts, covering various forms of content such as text, images, audio, video, and code. Compared to traditional analytics-focused artificial intelligence, generative artificial intelligence relies more on analysis to generate corresponding content. In the current context where the Ministry of Education emphasizes the deep implementation of educational informatization, artificial intelligence has already been applied in college English teaching. We should recognize the considerable value of generative artificial intelligence in enhancing the intelligence level of teaching while following up on application effectiveness during exploratory applications, ensuring that generative artificial intelligence can play a role in the reform of college English teaching.

2. Generative Artificial Intelligence and College English Teaching

To enhance the effectiveness of generative artificial intelligence in college English teaching, it is essential to

comprehensively sort out the feasibility and necessity of its involvement, so as to clarify the direction for subsequent analytical research.

2.1. Feasibility of Generative Artificial Intelligence's Participation in College English Teaching

The feasibility of generative artificial intelligence's engagement in college English teaching is relatively strong, as it can drive the construction of intelligent classrooms in college English, assisting teachers in achieving comprehensive educational goals. Specifically, this can be analyzed from two perspectives: students and teachers. On one hand, it supports personalized learning for students. Influenced by early English learning experiences, different college students exhibit variances in their English learning situations, and traditional teaching modes often struggle to address all students' needs. However, generative artificial intelligence can generate necessary resources based on students' learning situations, providing support for personalized English learning. On the other hand, it helps teachers improve teaching quality. Generative artificial intelligence can assist teachers in sorting out students' learning situations and generating referable teaching design plans based on the English knowledge taught in class, while also providing support for precise teaching guidance, contributing to the enhancement of college English teaching quality^[1].

2.2. The Necessity of Generative Artificial Intelligence in University English Teaching

2.2.1. Generating More Resources to Support Teaching Design

The involvement of generative artificial intelligence in university English teaching is essential, as it can generate more resources to support teaching design, simulate English communication scenarios to enhance experience, and simultaneously improve the quality of English teaching evaluation. Teaching design is key to determining the quality of university English instruction, and generative artificial intelligence excels at content generation. It can match and generate resources based on existing teaching materials provided by teachers, reference the English proficiency of students in a class to create similar resources, and provide more resources for teachers' instructional design, supporting innovative designs to ensure comprehensive development for more university students in their English learning. Additionally, teachers can input completed teaching designs and request the AI to analyze the design's rationale and generate modification suggestions, ensuring design quality through reference and corrections^[2].

2.2.2. Simulating English Communication Scenarios to Enhance Experience

Research shows that generative artificial intelligence brings new opportunities to university English teaching, such as simulating authentic English communication scenarios to help students enhance their learning experience. University English teaching requires both theoretical and practical knowledge; students need to solidify their grasp of English language knowledge theoretically and deepen their impressions through effective practical application to ensure that basic language knowledge supports actual English communication. Under the influence of large class teaching, teachers often find it difficult to attend to all students' performance in English speaking and provide the learning experiences needed. With the support of generative artificial intelligence, teachers can arrange for students to use learning tablets and practice communication with the AI, simulating various English communication scenarios to help students enhance their English learning experience.

2.2.3. Synchronously enhancing the quality and effectiveness of English language teaching evaluation

In university English teaching, teaching evaluation plays a key role as well, helping students understand their English learning outcomes in a timely manner, and providing teachers with more basis for teaching reflection, guiding them to optimize subsequent teaching design. With the involvement of generative artificial intelligence in teaching, teachers can also innovate teaching evaluations, better incorporating formative assessment. For example, teachers can download data generated during students' self-directed learning of English on the smart education platform, input this into generative artificial intelligence, and ask the AI to assess students' performance based on various data like the frequency of accessing

resources to learn English and the time taken to complete learning tasks^[3], thereby synchronously enhancing the quality and effectiveness of the teaching evaluation.

3. Current effectiveness of generative artificial intelligence in university English teaching

Currently, the application effectiveness of generative artificial intelligence in university English teaching has not yet met expectations and may still encounter real challenges, such as the slow transformation of the teacher's role in classroom teaching, the students' lack of adaptation to intelligent English learning, and the effectiveness being influenced by multiple factors. It is necessary to more realistically analyze the causes of these challenges to provide references for in-depth research on improving effectiveness.

3.1. The Transition of Teachers' Roles in Classroom Instruction is Slow

As generative artificial intelligence technology gradually integrates into college English teaching, traditional college English education faces unprecedented challenges, such as the slow transition of teachers' classroom roles, which may adversely affect application effectiveness. In the innovative teaching employing generative artificial intelligence, teachers still need to play a guiding role and control the application process. Analyzing practical applications reveals that many teachers exhibit high enthusiasm for application. After adopting generative artificial intelligence, the teacher's role should shift from knowledge transfer to guidance, mentoring, and evaluation. However, some teachers still focus heavily on the application process and have not simultaneously adapted and adjusted their teaching philosophies, making it more likely for them to encounter a slower transition in classroom teaching roles, thus impacting the effectiveness of generative artificial intelligence applications^[4].

3.2. Students are Not Yet Adapted to Intelligent English Learning

In college English teaching, students always hold a dominant position in classroom teaching, and teachers need to respect and ensure that. The same applies when innovating with generative artificial intelligence; on one hand, teachers need to possess good application awareness and capabilities, and on the other hand, students need to actively engage in intelligent English learning. As for the current situation, it is still common for students to be unaccustomed to intelligent English learning, which inevitably affects the effectiveness of generative artificial intelligence applications. This phenomenon results from various factors, such as students being accustomed to traditional learning methods after years of English study, and their own lack of proficiency in artificial intelligence, both of which require longer adaptation time and can affect application effectiveness.

3.3. The Effectiveness of Applications is Influenced by Multiple Factors

To deeply explore the implementation paths for generative artificial intelligence to empower reforms in college English teaching, attention should also be given to the influence of various factors on application effectiveness to provide ideas for future optimization. Apart from teachers and students, other influencing factors also impact the final application effectiveness. For instance, generative artificial intelligence, like other forms of AI, requires substantial data training, and if deployed locally, significant time must be invested in collecting students' English learning data to ensure that the AI can be effectively trained to support teaching design practice. Furthermore, the personalized learning facilitated by AI may lead to discrepancies in content and pace among students' English learning, which may complicate teaching for instructors and affect application effectiveness^[5].

4. Paths to Enhance the Effectiveness of Generative Artificial Intelligence in College English Teaching

When practically improving the effectiveness of generative artificial intelligence in college English teaching, it is advisable to prioritize enhancing research and teaching efforts through artificial intelligence applications. This involves exploring how to guide students in developing intelligent English learning habits, strengthening the involvement of artificial intelligence in the assessment process while fully leveraging generative AI teaching platforms. Additionally, demonstrating the application process can promote students' critical thinking and discussion, attempting to generate and expand exercises to enhance homework design, and selecting innovative paths to improve the application effectiveness of generative artificial intelligence more scientifically.

4.1. Strengthening Research and Teaching by Relying on Artificial Intelligence Applications

In the process of improving teaching with generative artificial intelligence, university English teachers are important application subjects and should incorporate the enhancement of research and teaching efforts into their application considerations to ensure and improve its effectiveness. First, teaching plan objectives and research activity plans can be inputted into artificial intelligence, which would generate evaluations of teaching quality and optimization suggestions, supporting the leaders of university English research groups in optimizing research activity plans, thereby ensuring the final research quality. Second, discussions should focus on the performance of generative artificial intelligence applications, selecting teachers with stronger application abilities to showcase teaching plans designed with generative artificial intelligence based on the goals of that particular research activity and sharing their ideas and experiences in innovating university English teaching with generative AI. This can help more underperforming teachers improve their application awareness and abilities, effectively addressing the challenges of slow transitions in teachers' classroom roles, and enhancing the effectiveness of generative artificial intelligence applications.

4.2. Guiding Students to Cultivate Intelligent English Learning Habits

The promoting effect of generative artificial intelligence on English learning has been widely confirmed, and teachers should guide students to correctly understand the role of generative AI in English learning, cultivating intelligent English learning habits. After applying generative artificial intelligence, the essence of the university English classroom has not fundamentally changed, and students still occupy the main position. Teachers should pay attention to the application challenges that students are not yet accustomed to in intelligent English learning, guiding them to cultivate good habits in learning English intelligently, thereby enhancing the effectiveness of generative AI applications. For instance, in teaching the unit "The Power of Technology," teachers should clarify that the language competence goal is to master academic vocabulary related to technology, and the critical thinking goal is to dialectically understand the impact of technology on society. Students are required to use generative AI to input part of the reading content's titles to generate keywords and complete a translation task between English and Chinese before class. Additionally, they should continue asking the AI to generate short English stories related to technology ethics based on three of these words, helping students develop good habits in using generative AI to assist their English learning.

4.3. Make Full Use of Generative AI Teaching Platforms

To address the challenge that the application effectiveness of generative AI is influenced by multiple factors, teachers should fully utilize existing teaching platforms and enhance the management of the application process. For example, in the teaching of the unit "The Digital Divide", teachers should clarify that the unit theme is the digital divide. In the pre-class preview stage, they should require students to use the textbook scanning function of the platform to take photos of the reading questions in the textbook and input them into the AI, which will generate thinking questions pointing to the prediction of the expansion or contraction of the digital divide. During this process, teachers should also input students' past exam scores to ensure that the AI can generate thinking questions that are more in line with students' learning

situations, helping them better complete the pre-class preview and form an initial understanding of the unit theme, the digital divide.

4.4. Enhance the Participation of AI in the Evaluation Process

In practice, teachers need to correctly recognize and seize the opportunities brought by generative AI technology to traditional English teaching, improve their application level of AI technology, and enhance the quality of college English teaching^[6]. In specific college English teaching practices, the participation of AI in teaching evaluation can also promote innovation. Teachers should also enhance the participation of AI. For instance, when conducting intelligent and innovative evaluation for the unit “Ethical Challenges of AI”, teachers can focus on the group debate session on whether AI should be granted legal personality. They can use iFlytek Xinghuo to record students’ speeches throughout the process, input instructions to require the AI to evaluate the frequency of students’ speech pauses based on the IELTS speaking scoring criteria, and simultaneously mark words that students repeatedly use more than three times. This provides more targeted teaching evaluations and generates improvement suggestions from the AI, thereby enhancing the application effectiveness of AI through increased participation.

4.5. Demonstrate the application process to promote students’ thinking and discussion

To enhance the effectiveness of generative artificial intelligence in college English teaching, teachers can also directly demonstrate the application process, thereby enlivening the teaching atmosphere and encouraging students to think and discuss around the unit theme. For example, when demonstrating the application process of generative artificial intelligence for the lesson “Wildlife Protection”, teachers can use the scene-based sentence generation function of Wenxin Yiyan, input instructions through an electronic whiteboard, and ask the artificial intelligence to generate an English short passage from the perspective of a wildlife scholar based on real wildlife data from the Congo rainforest, while marking the verb phrases in each sentence. Teachers can guide students to think about whether there are any parts in the short passage generated by the artificial intelligence that violate English usage, promoting their thinking and discussion around the relevant content of the unit theme and enhancing its application effectiveness.

4.6. Generate extension exercises to enhance the design of after-class homework

In actual college English teaching, generative artificial intelligence can achieve educational technology through intelligent interaction, and further realize talent cultivation under personalized teaching^[7]. In the design of after-class homework in college English teaching, generative artificial intelligence also has its place. Teachers can try to generate extension exercise content to further enhance its application effectiveness. Teachers should simultaneously input the recent exam scores of students in the class to ensure that the artificial intelligence can generate extension exercise content that matches both the unit theme and the students’ learning situation, ensuring that students can have a better experience in completing their homework.

5. Conclusion

In conclusion, against the backdrop of the Ministry of Education’s strong emphasis on the in-depth implementation of educational informatization, how to apply new technological elements to innovate college English teaching has also become a topic that universities and teachers need to comprehensively consider. With the wide popularization of domestic generative artificial intelligence, achieving further intelligent transformation has become a recognized scientific and technological innovation-driven development approach in society. In college English teaching, it is also necessary to re-examine the level of teaching informatization, clarify the practical participation and optimization of technological elements in teaching, and create favorable conditions for the application of generative artificial intelligence. As the application of generative artificial intelligence in the education industry is still in the early stage of exploration, it is necessary to maintain

reflection and follow-up based on actual application effectiveness, understand the current situation of effectiveness, and pragmatically select effective paths that are compatible with the current application status of generative artificial intelligence to explore innovation.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Zhang L Q, Zhan Y, Zhong W J, 2025, Research on the Construction of Smart Classrooms for College English Based on Generative Artificial Intelligence. *Modern English*, (02): 4-6.
- [2] Li C C, 2025, Research on the Impact of Generative Artificial Intelligence on College English Writing Teaching. *Modern English*, (01): 38-40.
- [3] Peng C X, 2024, Research on the Path of Integrating Generative Artificial Intelligence Technology into the Educational Ecosystem of College English in the Digital Age. *Knowledge Window (Teacher Edition)*, (12): 15-18.
- [4] Wang H X, 2024, Application Exploration of Generative Artificial Intelligence in College English Teaching Reform: A Case Study of the Teaching Reform Practice of "General Academic English Writing" Course. *Frontiers of Foreign Language Education Research*, 7(04): 41-50+95.
- [5] Wang Y L, Wu H W, Derakhshan A, 2024, Development and Validation of a Scale for Measuring the Attitudes of Chinese College English Learners towards Generative AI. *Journal of Beijing International Studies University*, 46(06): 30-45.
- [6] Cheng X, 2024, Application of Generative Artificial Intelligence in College English Reading and Writing Course Teaching: A Case Study of the Third Unit of the Second Volume of "New Horizon College English Reading and Writing Course (Intelligent Version)". *Modern English*, (12): 30-32.
- [7] Gu J Q, 2024, A Brief Discussion on the Application of Generative Artificial Intelligence Technology in College English Teaching: Taking SparkDesk (Xunfei Starfire) as an Example. *English Square (Academic Research)*, (17): 113-116.

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