Reform and Development of English Teaching in Colleges and Universities with the Integration of ChatGPT Technology

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Abstract: As an artificial intelligence-powered language generation model based on natural language processing, ChatGPT, like other artificial intelligence technologies, possesses super real-time dialogue capabilities and is considered an innovative and intelligent auxiliary teaching tool in the field of language learning. This article first analyzes the current state of development of artificial intelligence technologies such as ChatGPT. Secondly, it examines the challenges encountered in the reform and development of English teaching in colleges and universities in China. Lastly, it summarizes the applications and recommendations for using ChatGPT technology in college-level English teaching.

Keywords: ChatGPT; Artificial intelligence technologies; College English; Reform and development

1. Preface

ChatGPT (Chat Generative Pre-trained Transformer) is a chat robot program developed by OpenAI (American Artificial Intelligence Research Laboratory), released on November 30, 2022. ChatGPT is a natural language processing tool driven by artificial intelligence (AI) technology, which can conduct conversations by understanding and learning human language and interact according to the context of the chat. It can chat, communicate like humans, and even accomplish different kinds of missions, such as writing emails, video scripts, official documents, translations, codes, and academic papers. Since its release, AI technologies such as ChatGPT have received more and more attention in various fields of society and have had a great impact on people's lifestyles and ways of thinking [1].

The rapid development of ChatGPT has triggered widespread concerns among educators worldwide, mainly focusing on moral hazard, inaccurate feedback answers, ethical and legal issues, etc. [2]. Therefore, some colleges and universities have issued relevant policies prohibiting the use of ChatGPT in teaching. However, some scholars believe that "colleges should be thoughtful about applying ChatGPT as a teaching aid that can

unleash students' creativity, provide personalized tutoring, and help students prepare to work with AI systems as adults" [3].

2. Development status of artificial intelligence technologies such as ChatGPT

AI technologies such as ChatGPT have achieved significant progress in recent years. As a new chatbot model developed by OpenAI, ChatGPT uses an advanced deep neural network technology architecture to conduct more anthropomorphic communication and interaction with humans and can generate poems, novels, movie scripts, papers, codes, etc. The emergence of ChatGPT represents revolutionary progress in the field of AI-generated content (AIGC) and is of milestone significance for the application of AIGC of text and even multi-modal. In addition, AI technology has also made significant progress in speech recognition, natural language processing, computer vision, machine learning, and other fields. With the development of computer hardware, AI technology is expected to play a more important role in the future, bringing more intelligent and convenient services to human beings.

The potential application of AI technologies such as ChatGPT is widespread. In the field of education, it can be used as an intelligent auxiliary teaching tool. As an AI chatbot that is popular worldwide, ChatGPT is likely to become a milestone in the intelligent development of foreign language learning and the innovation of foreign language learning tools in the near future [4].

3. Problems of English teaching in colleges and universities in China

After more than ten years of reform and development, English teaching in colleges and universities in China is still facing a series of problems.

(1) Insufficient interactivity in teaching activities: In most colleges and universities in China, interactive English teaching activities in the classroom are not sufficient [5]. The traditional English teaching model is usually teacher-centered and focuses on one-way knowledge transfer, while students passively receive knowledge. In this model, there are few opportunities for students to participate in class discussions and interactions, and it is difficult for students to develop their initiative and creativity. In addition, large class sizes also limit the interaction between teachers and students, making it difficult for teachers to focus on the learning needs of each student.

(2) Insufficient personalized guidance: Due to the large number of students in college English classes, it is often difficult for teachers to provide sufficient personalized guidance to their students in English teaching in most colleges and universities in China. The English level, learning needs, and learning style of each student are different. However, the traditional English teaching model often adopts unified teaching content and syllabus, which cannot meet students' individual needs. This is the reason some students feel confused and helpless during the English learning process, and it is difficult for them to achieve ideal learning effects.

(3) Insufficient feedback from teachers: Due to the large number of students in college English classes, feedback from teachers is often insufficient in most colleges and universities in China. In order to adjust their learning strategies and methods promptly, students need to know their learning progress and existing problems in the English learning process. However, the traditional English teaching model often only focuses on students' final exam results and ignores tracking and evaluating students' learning process. As a result, students are unable to keep abreast of their own learning status and find it difficult to identify their shortcomings.

(4) Insufficient immersive language environment: Learning a language requires exposure to a real language environment. However, in most colleges and universities in China, immersive language environments are inadequate. Students are mainly exposed to textbooks and teachers' explanations of the textbooks in class and lack the opportunities to communicate in English and practice the English language. In addition, the English atmosphere on campus is poor, and it is difficult for students to communicate in English and express themselves in their daily lives.

To sum up, after more than years of reform and development, English teaching in colleges and universities in China is still facing a series of problems regarding interactivity in classroom teaching activities, personalized guidance, teacher feedback, and immersive language environments. To solve these problems, colleges and universities need to actively explore new teaching concepts and methods, enhance the professional standards of teachers, improve the evaluation system, and create a better and more efficient English learning environment for students.

4. The approaches of applying AI technologies such as ChatGPT in colleges English teaching

In college English teaching, AI technologies, including ChatGPT, have diverse applications, which effectively enhance teaching efficiency and boost students' English learning outcomes. Since the implementation of AI technologies offers numerous advantages as well as great challenges, this paper proposes specific strategies to maximize the potential of AI technologies such as ChatGPT in college English teaching.

4.1. Application of AI technologies such as ChatGPT in college English teaching

AI technologies such as ChatGPT have a variety of application scenarios in college English teaching, mainly covering intelligent tutoring and interaction, personalized and adaptive learning support, intelligent evaluation and feedback, and simulated real language environments. The realization of these application scenarios not only helps to improve the teaching efficiency of teachers but also effectively promotes students' English learning effect.

4.1.1. Intelligent coaching and interaction

College English teachers can use chatbots such as ChatGPT to provide intelligent tutoring and interaction in English teaching. Students can solve learning problems at any time through conversations with chatbots and receive timely feedback and suggestions. Teachers can also use AI technologies such as ChatGPT to build online teaching platforms and interactive teaching software to increase interaction channels between teachers and students and improve the classroom teaching effect. This interactive method can make the classroom more interesting, stimulate students' interest in learning, and improve learning results.

4.1.2. Personalized and adaptive learning

With the help of technology, foreign language teaching can be digitized and personalized to meet students' learning needs and improve teaching effects [6]. With ChatGPT, college English teachers can design personalized English courses and formulate teaching plans with a clearer aim based on student's needs and abilities. By collecting students' learning data and analyzing their learning characteristics and interests, teachers can provide students with learning resources and suggestions that are more relevant to their demands. ChatGPT's natural language processing and machine learning capabilities can provide students with a personalized and adaptive learning experience. The system can recommend appropriate learning resources and paths based on students' learning progress, abilities, and interests, so as to satisfy students' individual demands. This personalized

approach to teaching can better meet students' requirements and improve their learning outcomes.

4.1.3. Intelligent evaluation and feedback

AI technologies such as ChatGPT can be used for intelligent assessment and feedback in English classes. AI robots can help teachers collect students' learning data, including the performance of homework and in the classroom, etc., analyze students' learning performance and progress, monitor and evaluate students' learning at any time, and provide personalized, accurate, and timely feedback and study suggestions [7]. This type of assessment and feedback can help students better understand their own learning situation, adjust their learning strategies at any time, and improve their learning effects.

4.1.4. Simulation of the real environment to promote immersive language learning

ChatGPT can simulate natural language dialogue, creating a highly simulated English dialogue environment that allows students to practice speaking in a situation close to reality and providing students with opportunities for language communication [8]. Through conversational interaction with chatbots, students can improve their language communication skills, practice oral expression skills, and improve language fluency and accuracy. At the same time, students can also receive feedback and suggestions on grammar, pronunciation, and vocabulary. This immersive language learning method helps enhance students' sense and application ability of language.

4.2. The specific approaches to realizing the potential of AI technologies such as ChatGPT in college English teaching

The application of AI technologies such as ChatGPT in college English teaching has brought many advantages, but it also faces some challenges. This paper proposes a series of approaches and methods, which aim to better realize the potential of AI technologies such as ChatGPT, improve the quality of English teaching in colleges and universities, and promote the all-round development of students.

4.2.1. Continuously improving teachers' information literacy capabilities

With the rapid development of AI technologies such as ChatGPT, college English teachers need to continuously improve their information literacy capabilities to adapt to this technology-integrated teaching environment. Specifically, teachers should actively learn and master the basic principles and application methods of ChatGPT, as well as understand its potential advantages and limitations in English teaching. To ensure the effective application of AI technologies such as ChatGPT in English classroom teaching in colleges and universities, relevant technical training must be provided for English teachers. Different technical skills, like designing personalized teaching plans, managing and utilizing teaching resources, and interacting intelligently with students with the help of AI technologies such as ChatGPT, should be included in the training.

4.2.2. Actively innovating classroom teaching models

Teachers should actively try new classroom teaching models, explore new ways to integrate ChatGPT with multiple teaching models, change the form of homework and learning tasks, and make technology a propellant for teaching instead of a stumbling block [5]. For example, teachers can integrate ChatGPT into teaching based on game-based learning theory, generate graded and creative teaching tasks in classroom teaching, improving students' learning engagement and experience, so as to help students achieve personalized and adaptive learning. Previous studies have found that new classroom teaching models, like flipped classrooms and smart classrooms with the aid of ChatGPT, can help improve students' interest in learning [9].

4.2.3. Paying attention to ideological and political education in courses

In the process of adopting ChatGPT for English teaching, teachers should always put ideological and political education in an important position. Teachers should focus on shaping students' emotions, attitudes, and values [5]. By rationally applying the technical functions of ChatGPT, teachers should give students more humanistic care and fully implement the teaching concept of "Nurture Morality and Foster Talent" to ensure that students always have the right values for technology and maintain integrity and self-discipline when using technology, cultivating their sense of social responsibility and mission.

4.2.4. Strengthening integrity supervision and evaluation

In a teaching environment integrated with technology like ChatGPT, colleges should strengthen the supervision and evaluation of students' integrity. Specifically, colleges can formulate clear academic integrity standards and regulations and clarify the scope and restrictions of the use of technologies such as ChatGPT. In addition, colleges can also establish an effective supervision and evaluation system, establish clear reward and punishment penalties, and conduct regular inspections and evaluations of students' assignments and papers to ensure their originality and integrity with the aid of a combination of technical means and manual review. At the same time, any integrity issues should be dealt with just in time, and appropriate education and punishment should be given. Students who violate the principle of integrity should be given appropriate punishment, such as warning, deduction of credits, or even expulsion. At the same time, students who maintain a high degree of integrity should be recognized and rewarded.

To sum up, to better apply ChatGPT to college English teaching, teachers and colleges should take corresponding measures to improve teachers' information literacy capabilities, innovate classroom teaching models, pay attention to curriculum ideological and political education, and strengthen integrity supervision and evaluation. Through implementing these measures, technical tools such as ChatGPT can effectively promote the reform and development of English classroom teaching in colleges and universities in China, improving teaching effects and students' learning experience and language proficiency.

5. Conclusion

The application of AI technologies such as ChatGPT in college English teaching will focus more on simulating real situations, increasing the interactivity of classroom teaching activities, helping students develop a more personalized learning experience, and helping teachers provide students with personalized and accurate feedback and learning suggestions, to help students practice the language more naturally and immersively and continuously improve their language level through independent learning. At the same time, to better ensure the quality of language teaching, AI technologies such as ChatGPT should be used as a supporting tool rather than a complete replacement for traditional language learning methods.

It should be noted that the application of AI technologies such as ChatGPT in language teaching still faces some challenges and problems. For example, the functions of chatbots such as ChatGPT need to be further refined and optimized to improve the accuracy and reliability of their natural language generation and understanding. In short, the emergence and development of AI technologies such as ChatGPT have provided more efficient and high-quality teaching tools and data analysis support for language teaching, especially English teaching in China, and promoted the development and progress of English education. As AI technology develops, chatbots such as ChatGPT will play an increasingly important role in English teaching, bringing a more far-reaching impact to English teaching and learners.

Disclosure statement

The authors declare no conflict of interest.

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