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Research on the Innovative Development of English Teaching Modes in Higher Vocational Education in the AI Era

Bing Liu*

Guangzhou Huanan Business College, Guangzhou 510550, Guangdong, China

**Author to whom correspondence should be addressed.*

Abstract: With the continuous development of the times, artificial intelligence (AI) technology has gradually integrated into people's daily work and life, exerting a significant impact on relevant production and lifestyle patterns. Against this backdrop, the field of education should also keep pace with the times, continuously update itself, actively explore the positive role of new technologies in educational models, and constantly provide new ideas for the development of education. Vocational college English teaching also needs to attach importance to the integration of AI technology. Focusing on the fundamental task of fostering virtue through education, it should continuously optimize current educational methods and teaching models, promote the intelligent upgrading of courses, teaching materials, and teaching systems, and facilitate the in-depth development of English education. This paper starts with an overview of the application of AI technology in English teaching, explores the advantages of applying AI technology in vocational college English teaching, and analyzes the effective paths for the innovative development of vocational college English teaching models in the AI era. It is hoped that this paper can provide new references and teaching methods for vocational college English teaching, thereby promoting the overall improvement of English teaching.

Keywords: AI era; Vocational college English; Teaching model; Innovative development; Effective path

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1. Introduction

Nowadays, the rapid development of artificial intelligence has exerted many positive impacts on the field of education. In teaching activities, with its powerful information retrieval capability, big data analysis ability, and highly accurate personalized recommendation function, it can provide more efficient learning support for both teachers and students. It helps teachers realize intelligent lesson preparation and assists in teaching, and enables students to further enhance their mastery of knowledge through intelligent functions. Therefore, higher vocational English teaching should also actively adopt AI technology. By means of more intelligent teaching tools and methods, it should continuously optimize the overall teaching process of English teaching, to cultivate students'

innovative thinking and practical application ability, and ensure the overall quality of English learning.

2. Development and application of artificial intelligence technology

From the perspective of its functions, artificial intelligence (AI) itself is dedicated to researching and developing theories, technologies, and application systems that simulate, extend, and expand human intelligence. It holds an extremely important position in the field of computer science. Meanwhile, AI systems can achieve more efficient learning processes by imitating human thinking and learning patterns, enabling machines to accomplish complex tasks that were once exclusive to humans [1]. This capability was first formally proposed in the 1950s, and its development over the subsequent decades has gone through several landmark stages. For example, the rise of symbolism in the 1960s, the widespread application of expert systems in various fields in the 1970s, the breakthroughs in neural network technology that broke through bottlenecks in the 1980s, and the advent of new development opportunities for AI technology in the 1990s with the popularization of the Internet and the improvement of computing power [2]. The rise of big data and cloud computing in the 21st century has also laid a solid foundation for AI breakthroughs in fields such as image recognition and natural language processing. Up to now, the development of various AI software has become quite mature, and AI technology has been more widely applied in the education sector, becoming an important tool to promote high-quality development in education.

In the field of education, the application of AI technology has covered various aspects, such as intelligent lesson preparation, personalized learning recommendations, and automated assessment. It can effectively solve many problems existing in traditional teaching models and provide more new ideas for educational reform [3]. Specifically, in educational management, AI technology can record students' attendance and classroom performance through intelligent recognition systems, realizing supervision and management of the entire teaching process, thereby providing teachers with more accurate teaching analysis. At the same time, through powerful natural language processing and machine learning technologies, teachers' work processes can be further optimized: AI can help them automatically grade assignments and answer questions, saving teachers a great deal of time. This allows them to devote more time and energy to teaching, research, and student counseling [4]. In terms of students' learning, AI can provide personalized learning plans that match their current learning needs by in-depth analysis of their learning progress, behavioral patterns, and interest preferences. From these various applications, it is evident that the application of AI technology in education is comprehensive and in-depth. It not only promotes innovation in teaching methods but also further optimizes the personalization of teaching approaches, thereby continuously enhancing students' comprehensive abilities.

3. Advantages of applying AI technology in higher vocational English teaching

3.1. Realizing personalized and precise teaching

At the current teaching stage, there are certain differences in the English foundations of higher vocational students. Some students may have a relatively good English foundation and excellent grades, while others have a poor foundation and relatively weak grades. In this case, the traditional teaching mode is difficult to meet the learning needs of all students, and the unified teaching process can hardly take individual differences into account. The application of AI technology can help teachers formulate corresponding teaching plans according to students' different learning situations. For example, through the intelligent evaluation system, AI can accurately locate students' English proficiency by analyzing their learning data, and provide personalized learning paths for

students from multiple dimensions such as vocabulary, grammar mastery, and listening, speaking, reading and writing skills, to realize personalized and precise teaching.

3.2. Enriching teaching resources and innovating teaching modes

AI technology can provide richer learning resources for higher vocational English through its powerful search and data processing capabilities, including materials in various forms such as texts, audios, and videos, which makes it convenient for students to choose appropriate learning materials according to their own needs and improve their learning experience. At the same time, with the support of this technology, students and teachers can also access high-quality English learning materials worldwide, such as open courses of well-known foreign universities, original textbooks, and classic English literary works, which can greatly broaden students' learning horizons. In addition, the integration of AI technology has also brought new ideas to the teaching of English. For example, the virtual classroom generated with the support of AI technology can simulate a real language environment, allowing students to improve their oral and listening skills in an immersive experience [5]. There is also an AI-driven intelligent dialogue system, which can realize human-computer interaction anytime and anywhere, helping students practice oral English and correct pronunciation errors in a timely manner, thereby improving the fluency and accuracy of language expression.

4. Effective paths for the innovative development of higher vocational English teaching modes in the AI era

4.1. Integrating online teaching systems to enhance comprehensive English proficiency

In the AI era, the integration of artificial intelligence technology into higher vocational English teaching has become a key component of current educational development. Against the backdrop of rapid technological advancement, traditional teaching models in higher vocational English education have faced significant challenges. On one hand, new online education platforms can break the time and space constraints of traditional teaching, allowing students to learn anytime and anywhere, both in and out of class. This approach enables students to make full use of fragmented time, extending their learning duration to a certain extent and effectively improving learning efficiency [6]. Additionally, various online learning platforms support real-time teaching, significantly reducing the cost of knowledge dissemination in education. Therefore, after completing in-class teaching, teachers can use online apps to drive students' learning progress, assign personalized homework, and monitor students' learning dynamics in real-time through data analysis. Based on this, they can adjust subsequent teaching strategies to achieve more precise instructional guidance.

On the other hand, it is crucial to emphasize students' dominant role in teaching and enhance their practical application abilities through simulated English teaching training. Some vocational college students still have weak English foundations, and collective teaching often causes teachers to overlook the learning needs of individual students [7]. However, the comprehensive application of artificial intelligence technology allows teachers to accurately identify each student's weaknesses during online teaching and use various simulated English training functions to targetly improve their listening, speaking, reading, and writing skills. For example, teachers can use multimedia materials such as images or videos, combined with the content of the current lesson, to transform abstract English words into vivid and intuitive visuals, thereby deepening students' memory and understanding of vocabulary.

4.2. Optimizing resource utilization to improve matching accuracy

In traditional English classrooms in vocational colleges, teaching primarily revolves around textbook content, limiting students' exposure to language environments and knowledge to a single, constrained scope. A teaching approach focused on skills like English grammar can easily bore students, resulting in low classroom participation and suboptimal teaching outcomes. Establishing an English learning resource library through artificial intelligence technology can effectively address this issue [8]. Firstly, AI enables teachers to integrate various types of teaching resources. Big data and machine learning technologies can categorize these resources in detail, and after classification, label them based on importance, difficulty, and frequency of use. This helps teachers quickly find suitable materials for different students, significantly reducing the time spent searching for resources [9]. For instance, e-books, online practice materials, excellent lesson plans, video courses, and academic papers can be consolidated into the resource library. By searching for keywords, teachers can instantly access the required materials. Furthermore, post-use evaluations and feedback can be collected to further optimize the library's practicality. This ensures the resources are systematic and searchable, allowing teachers and students to access high-quality, diverse materials through intelligent searches. Moreover, the resource library's powerful search function can optimize algorithms based on individual teachers' and students' search and usage history, continuously improving resource matching accuracy. This saves substantial time and effort for teachers in lesson preparation and students in pre-class preview and post-class review, maximizing teaching effectiveness [10].

4.3. Strengthening situational teaching environment and promoting interactive learning

With the support of AI technology, higher vocational English teaching can build a highly simulated situational teaching environment based on advanced teaching technologies, enabling students to conduct simulation training in a relatively real language environment. Specifically, virtual simulation technology can reproduce various scenarios such as workplace, business negotiations, daily life, and travel, guiding students to engage in practical conversations in English, continuously improving the effectiveness of their practice, and thus enhancing their confidence in their English communication skills [11]. For example, in a simulated business English negotiation scenario, teachers can have students play the roles of both parties in communication. Through preset dialogue scripts and real-time feedback mechanisms, students' response abilities are continuously stimulated. After the simulation, a detailed evaluation report is provided, pointing out students' deficiencies in grammar, vocabulary, expression, etc., to help them make targeted improvements. In addition, AI-driven intelligent interactive tools can also provide new channels for interaction between teachers and students. Teachers can use relevant tools to create dedicated English learning communities, guiding students to actively participate in interactive communication through text, voice, video, and other forms by releasing learning tasks such as course-related topic discussions and case analyses [12]. At the same time, AI intelligent assistants can also conduct real-time analysis of students' discussion content during this process, extract key viewpoints agreed upon by most people, and provide targeted explanations to students, thereby helping them broaden the breadth and depth of their thinking and promoting the development of interactive learning.

4.4. Optimizing offline classroom teaching and promoting innovation in teaching modes

With the support of AI technology, most teachers will pay more attention to the application of advanced technologies in teaching. However, teachers also need to recognize that technology is only a tool to assist teaching. The core of higher vocational English teaching remains the face-to-face interaction and communication between teachers and students in offline classrooms. Only by organically combining online technology with

offline classrooms can the advantages of AI technology be truly exerted and teaching effects be improved [13]. Therefore, in the process of offline classroom teaching, teachers should focus on guiding students to think deeply, analyze the practical application methods of the knowledge they have learned, change the previous teaching method where only teachers unilaterally output information, and continuously optimize teaching [14]. Before the class starts, teachers can release the key and difficult points of study and teaching objectives of the lesson to the teaching platform in advance, allowing students to understand and prepare in advance. After the class begins, teachers can use AI intelligent technology to obtain students' preview data in real-time, and conduct targeted explanations based on the questions they put forward and the knowledge points with high error rates, accurately grasping the extent of students' mastery of knowledge and preparing for subsequent teaching. In the classroom interaction session, teachers can use intelligent question-and-answer systems to launch small activities such as group competitions and classroom quizzes to attract students' attention and improve their classroom participation. When explaining key English grammar knowledge, teachers can randomly put forward situational application questions and let students answer them orally or in writing on the spot. Then, the AI system can promptly comment on or correct the answers, generate corresponding answer reports, and collect the common weak points among students. Teachers can then give more detailed explanations, and at the same time, let the AI system record other unsolved problems for personalized tutoring after class [15]. After class, teachers can check the specific learning situation of students in this lesson through the AI teaching analysis platform, to summarize the teaching achievements of this lesson, continuously optimize the subsequent teaching content and methods, and promote the innovative development of the offline classroom teaching mode of higher vocational English.

5. Conclusion

In general, against the backdrop of the rapid upgrading and updating of information technology, higher vocational English teaching also needs to keep pace with the development of the times, integrate advanced concepts and technical means of the AI era, and continuously optimize its teaching methods and models to ensure the timeliness and practicality of teaching content. With the support of relevant technologies, teachers need to comprehensively utilize online and offline teaching resources, optimize students' learning experience, thereby continuously improving their learning effectiveness, promoting the further development of higher vocational English teaching, and at the same time laying a solid foundation for students' future learning and progress, and enhancing their comprehensive abilities.

Disclosure statement

The author declares no conflict of interest.

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