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Study on the Exploration of College English Teaching Models Empowered by Artificial Intelligence

Dandan Liu*, Mei Wang
Jiangsu Maritime Institute, Nanjing 211170, Jiangsu, China

**Author to whom correspondence should be addressed.*

Abstract: With the rapid development of AI technology, its application in the field of education has become increasingly widespread. This is particularly true in language teaching, where AI is extensively used in classroom instruction, providing teachers and students with greater convenience and more opportunities. Therefore, college English teaching should give full play to the advantages of artificial intelligence technology, innovate teaching models, and enrich teaching methods. It should realize precise teaching and immersive learning through technologies such as intelligent voice and English learning platforms, so as to comprehensively improve teaching quality and students' language proficiency.

Keywords: Artificial intelligence; Teaching model; College English teaching

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1. Introduction

In the current era of rapid development of information technology, artificial intelligence has become a crucial force driving transformation across various fields. As a key component of social development, the field of education is actively exploring in-depth integration with AI. English teaching in colleges and universities bears the important responsibility of fostering the language proficiency of internationalized talents. However, certain issues and challenges persist in traditional college English teaching, such as the singularity of teaching content and methods, low utilization efficiency of teaching resources, and insufficient student engagement and motivation [1]. Artificial Intelligence has brought new opportunities to solve these problems, becoming a key force in promoting the modernization of this field and also opening up more possibilities for the modernization of education [2]. This paper aims to conduct an in-depth study on how artificial intelligence (AI) empowers college English teaching models to provide theoretical references and practical guidance for promoting the reform of college English teaching.

2. The value implication of artificial intelligence empowering English teaching in colleges and universities

Traditional English teaching in colleges and universities often faces the dilemma of a "one-size-fits-all" approach, making

it difficult to accommodate differences in students' language foundations and learning styles. By leveraging data analysis and machine learning technologies, artificial intelligence (AI) can accurately identify each student's weak points and learning needs. For instance, intelligent learning platforms can dynamically push personalized training content based on the types of mistakes students make in listening comprehension, and writing correction systems can provide targeted feedback from multiple dimensions, such as grammar, logic, and idiomatic expressions. This precision-oriented teaching model effectively addresses the shortcomings of traditional teaching in personalized guidance, significantly enhancing both teaching efficiency and learning outcomes.

Under the background of artificial intelligence (AI), technologies such as virtual reality (VR) and augmented reality (AR) have provided various forms of immersive teaching environments for English language instruction. Students can independently watch learning videos and engage in human-machine dialogue simulation training on online learning platforms. The diversified learning content can specifically enhance students' comprehensive practical English proficiency. Relying on AI technologies, students can participate in personalized English practical learning activities, deeply reflect on their own learning difficulties within these activities, develop sound English thinking, and enhance their intelligent learning capabilities. These innovative learning experiences transform passive learning into active exploration, effectively stimulating students' interest in learning and participation, and facilitating the cultivation of their autonomous learning abilities.

Against the backdrop of uneven distribution of English teaching resources in colleges and universities, artificial intelligence (AI), by virtue of cloud-based sharing and intelligent recommendation technologies, can efficiently deliver high-quality teaching resources to institutions in different regions and tiers. Students in remote areas can access premium courses taught by renowned teachers from first-tier cities through online platforms, and intelligent systems can also dynamically adjust the difficulty level of teaching content based on the regional educational standards. Furthermore, AI-driven teaching tools can significantly reduce teachers' burden of repetitive work, enabling them to focus their energy on teaching design and personalized guidance. Ultimately, this facilitates the rational allocation of educational resources and the overall improvement of teaching quality.

In summary, the integration of artificial intelligence into college English teaching represents not merely a technological upgrade but a fundamental transformation of educational paradigms. As AI continues to evolve, future research should focus on addressing potential challenges such as ethical concerns regarding data privacy, algorithmic bias, and the balance between human-teacher intervention and AI-driven instruction. Additionally, exploring the synergy between AI and emerging educational trends could further revolutionize English language education. By continuously optimizing and innovating AI-empowered teaching models, colleges and universities can cultivate English-proficient talents who are equipped with strong language skills and possess the adaptability and innovation capabilities required in the digital age.

3. Innovative pathways for artificial intelligence technology to empower English language teaching

3.1. Empowering online English teaching to enhance students' comprehensive English application abilities

The empowerment of artificial intelligence (AI) technology in online English courses of higher vocational colleges can ensure the high-quality implementation of English teaching activities from three aspects:

(1) It enhances students' enthusiasm and initiative in learning English knowledge through the online-offline blended teaching model. The emergence and application of AI technology have largely subverted the traditional teaching model of English courses.

(2) It conducts simulated English teaching training online, clarifies students' dominant and core position in teaching, and formulates personalized learning plans for them.

(3) It leverages AI to enable interactive operations on students' comprehensive English abilities in online teaching, thereby achieving effective interaction between teachers and students. Whether for students with a solid English foundation or those with a weak one, a single teaching method cannot meet their learning needs [3]. Therefore, by relying on artificial intelligence (AI) technology, it is possible to conduct in-depth analysis of students' learning behaviors, knowledge mastery, and weak points, and construct personalized learning paths for them.

3.2. Strengthening offline classroom teaching and innovating teaching models with the support of artificial intelligence

With the continuous update and development of artificial intelligence (AI) technology, online teaching has gained significant advantages in terms of teaching formats and teaching resources. However, offline teaching remains indispensable for English course instruction in colleges and universities. Only by advancing the online-offline blended teaching model simultaneously can the optimal teaching effect be achieved breaking the temporal and spatial boundaries of traditional classrooms as well as the limitations of one-way teaching. With its data-driven analytical capabilities to gain insights into the dynamics of teaching and offer decision-making support for teachers to accurately grasp students' learning status. By integrating data throughout the learning process, the system can dynamically diagnose students' knowledge weaknesses and ability development trajectories, helping teachers flexibly adjust teaching strategies. Meanwhile, intelligent technologies endow classrooms with stronger interactivity and extensibility, transforming abstract language knowledge into contextualized and immersive learning experiences, which stimulates students' enthusiasm for active participation. In classroom teaching, AI-based language tests are used to conduct targeted training on students' English listening and speaking skills. Based on students' learning performance, the key knowledge content of classroom teaching is adjusted in real time, laying a solid foundation for students' subsequent advanced learning [4]. This integration not only enhances the precision and personalization of classroom teaching but also promotes the transformation of English teaching from knowledge indoctrination to literacy cultivation. Furthermore, it builds a student-centered new teaching ecology that embodies both depth and warmth.

3.3. Enriching teaching methods and building a harmonious atmosphere in English classrooms

Artificial intelligence (AI) technology and various online learning platforms developed on its basis have become powerful assistants for English teachers in higher vocational colleges to carry out diverse forms of teaching activities. Throughout the teaching process, teachers serve as inspirers and guides for students. Relying on AI technology, teachers can further enrich intelligent English teaching methods and approaches, and create a positive classroom teaching atmosphere.

(1) AI technology can help teachers dynamically grasp students' learning achievements [5]. Against the backdrop of empowerment by artificial intelligence (AI) technology, higher vocational colleges are vigorously promoting a teaching model that combines the flipped classroom approach with the online-offline blended approach in English teaching.

(2) In the courseware introduction stage, the use of AI technology can significantly enhance its interest. This allows students to understand and memorize the English language through various forms of skill training, learn to analyze and solve problems with English thinking, and concentrate fully on listening to the teacher's explanation of the solution processes for various knowledge points.

(3) AI can also develop personalized preview and review plans for all students in the class, keep track of students' learning progress at various stages, dynamically adjust the focus of students' review, and improve students' comprehensive English abilities in a targeted manner.

In summary, artificial intelligence technology offers multifaceted innovative pathways to revolutionize English language teaching. By enabling personalized online learning, enhancing offline classroom efficiency through data analytics, and enriching teaching methods, AI breaks the shackles of traditional education models, catering to diverse learning needs and fostering a more dynamic teaching - learning environment. As AI continues to evolve, its integration

with English teaching should be guided by ethical principles and a focus on maintaining the irreplaceable role of human teachers. This harmonious blend of technology and human expertise will not only elevate the quality of English education but also equip students with the language proficiency and digital literacy essential for success in the modern global landscape.

4. Implementation strategies for artificial intelligence technology to empower English teaching

To carry out differentiated teaching practices that cater to students' individual needs, it is necessary to rely on artificial intelligence (AI) technology to conduct in-depth analysis of students' learning characteristics and proficiency levels. By collecting and analyzing students' learning data across multiple dimensions, such as vocabulary mastery, grammar application, and oral expression, intelligent systems can accurately identify each student's knowledge weaknesses and learning preferences, and develop customized learning paths for them. For instance, for students with a weak foundation, the system prioritizes pushing basic-level courses and exercises to consolidate their fundamentals; for students with higher proficiency, it provides extended content such as academic English or cross-cultural communication materials. At the same time, it dynamically adjusts teaching progress and difficulty level to ensure that every student can improve their language proficiency at a pace suitable for themselves. This truly returns education to its "people-oriented" essence and transforms English classrooms into personalized development spaces that meet diverse learning needs.

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To enhance students' initiative and interaction levels in classroom learning, it is necessary to leverage artificial intelligence (AI) technology to break the limitations of one-way knowledge transmission in traditional classrooms. Through intelligent interactive platforms can create diverse language practice scenarios, such as AI-driven role-plays and virtual group collaboration projects, guiding students to actively participate in topic discussions and task solving. For example, intelligent grouping systems can scientifically assign students based on their language proficiency and personality traits, ensuring that everyone has a role and a voice in group activities. With real-time feedback tools, students can instantly submit opinions, participate in voting, or evaluate each other. The system synchronously generates data visualization analyses, helping teachers accurately grasp classroom dynamics and adjust interaction strategies. This human-machine collaborative interaction model not only transforms students from passive listeners to active speakers but also continuously stimulates their enthusiasm for participation through immediate positive feedback and personalized incentives, thereby building a vibrant English classroom ecology.

The development of artificial intelligence (AI) technology has not only improved students' learning outcomes but also provided teachers with more teaching ideas and methods, prompting them to continuously explore and experiment with new teaching models. Driven by AI technology, English classroom teaching in colleges and universities will surely achieve continuous innovation and progress, cultivating more high-quality talents with a solid English foundation and strong language application abilities.

In essence, the implementation of artificial intelligence technology in English teaching is not a one-size-fits-

all solution but a dynamic, iterative process that requires continuous adaptation and optimization. By integrating AI-powered personalized learning, smart classroom management, and innovative assessment strategies, educators can transform traditional English teaching into a more inclusive, efficient, and student-centered practice. However, successful implementation hinges on a commitment to ethical use, data security, and the preservation of the human element in education. As institutions and educators embrace these strategies, they not only enhance the effectiveness of English instruction but also prepare students for a future where language proficiency, digital literacy, and adaptability are keys to success in an AI-driven global society.

5. Conclusion

In conclusion, the exploration of college English teaching models empowered by artificial intelligence represents a transformative step in modernizing higher education language instruction. By integrating AI tools such as adaptive learning platforms and intelligent feedback systems, this paradigm effectively addresses core limitations of traditional teaching, including insufficient individualized guidance and limited authentic language practice while significantly boosting students' English proficiency, autonomous learning ability, and intercultural communication skills . These advancements not only elevate the quality of college English education but also align it with the demands of a digitally interconnected world. Yet, the implementation of AI-empowered models also requires careful consideration of potential challenges. Critical issues like student data privacy risks and the risk of over-reliance on technology highlight the need for balanced governance: AI should serve as a complement to, rather than a replacement for, human teachers, who remain irreplaceable in guiding critical thinking, providing emotional support, and interpreting cultural nuances [6].

Looking ahead, future efforts should focus on optimizing AI algorithms to better match diverse student learning styles and conducting in-depth studies on the long-term impact of AI integration. By reconciling technological innovation with educational essence, AI-empowered college English teaching models will continue to unlock new potential, ultimately nurturing language learners equipped to thrive in a globalized society.

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Disclosure statement

The author declares no conflict of interest.

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