The Application Status, Problems and Challenges of Artificial Intelligence Technology in the Teaching of British and American Literature

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Abstract: The rapid development of artificial intelligence technology has brought new opportunities and challenges to the teaching of British and American literature. This paper examines the application status of artificial intelligence technology in the teaching of British and American literature, analyzes its existing problems, and proposes corresponding countermeasures. The study finds that intelligent teaching aids, intelligent learning resources, and intelligent teaching methods have become important means to improve teaching effectiveness. However, it still faces challenges such as technical bottlenecks, changes in teaching content and methods, and students' learning adaptability. By strengthening technology research and development and application, reforming teaching content and methods, and enhancing teacher training and student guidance, these challenges can be effectively addressed, and the in-depth integration of British and American literature teaching and artificial intelligence technology can be promoted.

Keywords: Artificial intelligence technology; Teaching of British and American literature; Application status; Problems and challenges

1. Introduction

The rapid development of artificial intelligence technology is profoundly changing the field of education. Experts and scholars in the industry have identified a series of problems brought about by artificial intelligence and explored solutions. For example, Wen Qiufang pointed out that we should embrace new artificial intelligence technologies with enthusiasm, understand their advantages and disadvantages, think deeply, and organically integrate new technologies into the existing foreign language education system to produce high-quality achievements empowered by artificial intelligence in the field of foreign language education and promote the reform of foreign language education to a new level.

The teaching of British and American literature in institutions of higher learning has also been inevitably and profoundly influenced by artificial intelligence. The application of artificial intelligence technology has

brought unprecedented opportunities to the teaching of British and American literature, "injecting fresh vitality into the classroom teaching of British and American literature in colleges and universities" [1]. However, it is also accompanied by a series of problems and challenges. The purpose of this paper is to comprehensively examine the application status of artificial intelligence technology in the teaching of British and American literature, analyze its existing problems, and propose corresponding countermeasures, aiming to provide references for relevant research and practice.

2. The application status of artificial intelligence technology in the teaching of British and American literature

Intelligent learning resources play an increasingly important role in the teaching of British and American literature, providing students with unprecedented convenience and a rich learning experience. "Artificial intelligence technology can integrate massive ubiquitous learning resources, gather high-quality learning resources of different types, classify them in a scientific and orderly manner, and construct an open and expandable resource library" [2]. Online courses, as an important form of intelligent learning resources, break through the time and space limitations of traditional classrooms, allowing students to study anytime and anywhere. The content of online courses covers various aspects from the interpretation of classic literary works to the exploration of literary theories, providing students with comprehensive learning materials. At the same time, these courses are often equipped with interactive links such as online discussions and assignment submissions, enhancing students' sense of participation and autonomy in learning.

Digital textbooks are another important type of intelligent learning resource. "Digital textbooks are a new form of textbooks that are highly related to but completely different from traditional paper-based textbooks. They have their unique features in terms of compilation, design, development, construction, and publication, and are the focus of research on digital foreign language textbooks" [3]. They convert traditional paper-based textbooks into electronic forms, facilitating students to read and study on various devices. Digital textbooks not only retain all the content of paper-based textbooks but also make the learning content more vivid and interesting by embedding multimedia elements such as audio, video, and animation. These multimedia elements can help students better understand the background and plot of literary works, improving their learning interest and effectiveness.

In addition, intelligent learning resources also include various learning tools and platforms. These tools and platforms use big data and artificial intelligence technology to analyze and predict students' learning behaviors, providing them with personalized learning suggestions and resource recommendations. There is a significant positive correlation between the efficiency of online intelligent learning platform systems and students' satisfaction with online learning. At the same time, in the post-pandemic era driven by big data, how to improve students' learning efficiency on online intelligent learning platforms has become a top priority in the current education field [4].

The application of intelligent teaching methods in the teaching of British and American literature has achieved remarkable results. Adaptive learning systems and intelligent assessment systems are important supports. "Most adaptive learning systems provide hierarchical learning content and use hierarchical assessments to predict the initial level of each learner. The most important purpose of hierarchical assessment is to quickly and accurately measure the learner's level with the help of efficient assessment question types and psychometric models" [5]. Adaptive learning systems can dynamically adjust teaching content and difficulty by accurately

tracking and analyzing students' learning progress and ability levels. When the system detects that students have difficulties in understanding a certain literary work, it will automatically provide additional supplementary materials or guiding questions to help students gradually overcome obstacles. This personalized learning method not only improves students' learning interest but also makes the teaching process more in line with the actual needs of each student.

3. Problems of artificial intelligence technology in the teaching of British and American literature

The integration of artificial intelligence technology into the teaching of British and American literature undoubtedly brings unprecedented convenience and efficiency to teaching. However, it also poses new challenges to students' learning adaptability and educational equity.

Firstly, the diversity of the student group leads to different acceptance and adaptability levels to new technologies. Younger students may be more likely to accept and proficiently use artificial intelligence tools such as intelligent recommendation systems and speech recognition software, while older students or those with a weak technical foundation may feel confused and frustrated. This technological gap not only affects students' learning efficiency but may also exacerbate educational inequality, causing some students to miss out on high-quality educational resources due to technical barriers. The intelligent learning environment emphasizes autonomous learning and personalized learning paths, which is a great challenge for students accustomed to traditional cramming teaching methods. They need to learn how to effectively use intelligent tools for self-exploration, how to screen valuable content from massive information, and how to evaluate their learning progress and effectiveness. This transformation process is often accompanied by confusion and anxiety and requires sufficient guidance and support from educators [6].

In addition, excessive reliance on artificial intelligence technology may lead to the degradation of students' basic abilities. "Artificial intelligence dependence refers to the phenomenon that individuals overly rely on intelligent technology in their daily work, study, and life, to the extent that they reduce or neglect their thinking and creative thinking, resulting in limitations or even regression in personal and social development. This trend will harm individuals and society, manifested as reduced autonomy, limited creativity, increased vulnerability to technology, and possible social unfairness, etc." [7] For example, over-reliance on intelligent translation tools may weaken students' language understanding and expression abilities, and frequent use of intelligent writing assistants may suppress students' creative thinking and independent writing abilities. Therefore, how to balance the relationship between technical assistance and autonomous learning has become a problem that educators must face.

Although the introduction of artificial intelligence technology can theoretically achieve precise teaching through big-data analysis and tailor-made learning plans for each student, in actual operation, it may exacerbate the imbalance in the distribution of educational resources. On the one hand, high-quality intelligent teaching resources and platforms are often costly, and not all schools can afford them, which may further widen the educational gap between urban and rural students and those from different economic backgrounds. On the other hand, technology is updated rapidly, and students in poor areas or disadvantaged groups may find it difficult to keep up due to a lack of timely technical training, further widening the gap with other students.

In addition, the application of artificial intelligence technology may also exacerbate educational unfairness caused by the "digital divide." "Due to significant differences in school resources in different regions, the 'digital

divide' phenomenon in the process of campus informatization construction cannot be ignored" [8]. For students who do not have sufficient digital literacy or stable network connections, it will be extremely difficult to use intelligent tools for learning. This not only affects their learning efficiency but may also dampen their learning enthusiasm and self-confidence, forming a vicious cycle.

The introduction of artificial intelligence technology has not only changed students' learning methods but also put forward new requirements for teachers' roles and professional skills. Teachers need to continuously learn new technologies, master how to use intelligent tools to improve teaching effectiveness, and at the same time maintain a deep understanding of human emotions and creativity to guide students' comprehensive development. However, the reality is that many teachers lack the necessary technical training and support and find it difficult to effectively respond to this change. In addition, in an intelligent teaching environment, the role of teachers has changed from knowledge transmitters to learning guides and facilitators, which requires them to have stronger teaching design capabilities, emotional communication capabilities, and innovation capabilities, posing a higher challenge to teachers' professional growth [9].

4. Exploration of countermeasures and suggestions

4.1. Strengthening technology research and development and application to overcome technical bottlenecks

"The teaching environment in the big-data era will be more intelligent, breaking the teaching pattern of fixed classrooms, textbooks, teachers, and time. To adapt to foreign language teaching in the big-data era, the construction of an information-based foreign language teaching environment is of great importance" [10]. In response to the technical bottlenecks faced by artificial intelligence technology in the teaching of British and American literature, we should actively take measures to strengthen the research, development, and application of technologies and platforms [11]. For example, increase research and development investment, especially in the fields of speech recognition and natural language processing, and encourage researchers to carry out technological innovation to improve the accuracy and efficiency of technology. This includes developing more advanced algorithms to better recognize and process complex speech and text information in British and American literary works. In addition, it should be noted that "when constructing an interactive platform for foreign language education technology based on artificial intelligence technology, it is crucial to conduct a platform requirements analysis" [12].

At the same time, we should actively promote the educational application of new technologies. Through cooperation among educational technology companies, research institutions, and universities, explore the specific application paths of artificial intelligence technology in the teaching of British and American literature. For example, an intelligent interpretation system for British and American literary works can be developed. Using natural language processing technology, the system can deeply analyze the works, and extract elements such as emotions, themes, and symbols, providing students with a more intuitive and in-depth learning experience.

4.2. Reforming teaching content and methods to adapt to the intelligent trend

"In the era of artificial intelligence, teaching models and knowledge production are being reversed and optimized. Foreign language teachers must necessarily participate in the reform and innovation of teaching" [13]. Therefore, the teaching content and methods of British and American literature also need to be reformed accordingly. Firstly, the teaching content should be updated, and artificial intelligence technology should be integrated into

the curriculum system so that students can understand and master relevant artificial intelligence technology while learning British and American literature. This can not only broaden students' knowledge horizons but also cultivate their interdisciplinary thinking abilities.

In terms of teaching methods, we should actively explore the application of intelligent teaching means. For example, an adaptive learning system can be used to provide students with personalized learning resources and paths according to their learning progress and interests. At the same time, an intelligent assessment system can help students understand their learning effectiveness in real time and adjust their learning strategies promptly. At the same time, we should also focus on cultivating students' autonomous learning abilities and critical thinking. By guiding students to use artificial intelligence tools for autonomous learning and exploration, we can cultivate their independent thinking and problem-solving abilities. At the same time, students should be encouraged to conduct critical interpretations and analyses of literary works to improve their literary appreciation and creative abilities.

4.3. Strengthening teacher training and student guidance to improve adaptability

To help students and teachers better adapt to the intelligent learning environment, we should strengthen teacher training and student guidance. Firstly, relevant training courses and seminars can be organized for teachers to improve their information literacy and technology application abilities. This includes learning how to use various intelligent teaching tools and platforms and how to design and implement intelligent teaching plans. Teachers should "have an in-depth study of the artificial intelligence curriculum system, understand the cutting-edge technologies in the current artificial intelligence field, be able to construct the knowledge system and knowledge map of artificial intelligence courses and have a systematic study and summary of artificial intelligence in the three aspects of perception, learning, and cognition" [14]. "We should strengthen the training and development of foreign language teachers, especially pay attention to the construction and development of teachers' information-based teaching abilities. For artificial intelligence to be integrated with foreign language teaching, teachers' information-based teaching abilities must keep up; otherwise, a highly intelligent learning environment will become a mere formality" [15].

In addition, to stimulate students' learning enthusiasm and interest, various forms of online and offline activities can be carried out. For example, online literary salons and work exhibitions can be organized to provide students with opportunities to showcase their literary achievements and creative insights. At the same time, well-known writers and scholars can be invited to give online lectures and exchange activities, providing students with a wider range of learning resources and communication platforms.

Of course, "the future of foreign language education and research lies in the in-depth integration of human intelligence and artificial intelligence. On the one hand, artificial intelligence, as an auxiliary tool, can significantly improve the efficiency and effectiveness of education and research. On the other hand, the participation of human intelligence ensures the maintenance of humanistic care and core values in education and research." Therefore, strengthening technology research and development and application, reforming teaching content and methods, and strengthening teacher training and student guidance are effective countermeasures to solve the problems existing in the application of artificial intelligence technology in the teaching of British and American literature. Through the implementation of these measures, we can better exert the advantages and functions of artificial intelligence technology and promote the reform and development of the teaching of British and American literature.

5. Conclusion

The application of artificial intelligence technology in the teaching of British and American literature is a complex and challenging topic. This paper examines the application status of artificial intelligence technology in the teaching of British and American literature, analyzes its existing problems, and proposes corresponding countermeasures. It points out that intelligent teaching aids, intelligent learning resources, and intelligent teaching methods have become important means to improve teaching effectiveness, but they still face challenges such as technical bottlenecks, changes in teaching content and methods, and students' learning adaptability. By strengthening technology research and development and application, reforming teaching content and methods, and strengthening teacher training and student guidance, these challenges can be effectively addressed, and the in-depth integration and development of British and American literature teaching and artificial intelligence technology can be promoted.

In the future, with the continuous progress of artificial intelligence technology and the expansion of application scenarios, we have reason to believe that artificial intelligence technology will play an even more important role in the teaching of British and American literature. At the same time, we should also continuously pay attention to the possible problems and challenges and keep exploring and innovating to make greater contributions to the cultivation of literary talents in the new era.

Disclosure statement

The author declares no conflict of interest.

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