Research on the Path and Model of Empowering English Teaching Innovation with Artificial Intelligence

Juan Yu*

Xi'an Kedagaoxin University, Xi'an 710109, Shaanxi, China

Corresponding author: Juan Yu, 18092332830@163.com

Abstract: With the continuous progress of artificial intelligence technology, its application in the field of education is increasingly extensive, which has brought profound changes to the traditional teaching mode. Under the background of education informatization, the application of artificial intelligence technology not only changes the way we obtain and process information but also greatly improves the personalized level of education, especially in the field of English education, its application potential is particularly significant. This paper makes an in-depth analysis of the dilemma of "empowering" English teaching by artificial intelligence. It puts forward the corresponding teaching model innovation path from the aspects of building an intelligent teaching resource base, formulating personalized learning plans, developing an intelligent teaching platform, developing intelligent language learning software, and strengthening teacher information technology training, hoping to provide useful references for college English teaching reform.

Keywords: Artificial intelligence; Empower; English teaching; Innovation path; Teaching mode

1. Introduction

Under the background of the information age, education informatization has become an important force to promote the reform and development of education modernization. With the rapid development of information technology, especially the continuous progress of artificial intelligence technology, the field of education is undergoing profound changes. As an important tool for international communication, the improvement of English teaching quality is of great significance for cultivating innovative, composite and application-oriented talents with an international vision [1]. However, the traditional English teaching model often has problems, such as limited teaching resources, insufficient personalized learning, and single assessment methods. These problems not only limit the efficiency and quality of English teaching but also make it difficult to meet the growing needs of students for personalized learning. Under such circumstances, how to use artificial intelligence technology to enable English teaching innovation and improve the efficiency and quality of English

teaching has become an urgent problem in the current education field.

2. The dilemma of "empowering" college English teaching by artificial intelligence
2.1. Uneven popularization and application of the technology
The application of artificial intelligence technology in college English teaching first faces the problem of uneven popularity and application of technology. Colleges and universities in economically developed areas, due to sufficient funds and advanced technology, can quickly introduce and apply artificial intelligence technology to build an intelligent teaching environment. However, it is often difficult for colleges and universities to fully promote and apply AI technology in economically backward areas due to financial and technological limitations. This unbalanced development situation leads to great differences in English teaching levels among colleges and universities in different regions, which is not conducive to the realization of educational equity [2]. In addition, even within the same university, due to the difference in resource allocation between different departments and different majors, the application degree of artificial intelligence technology will be uneven. Some popular or key majors may have more technical resources and support, while some less popular or marginal majors may face the dilemma of a lack of technical resources. This internal imbalance will also affect the quality and effectiveness of English teaching.

2.2. Students' independent learning ability is not strong
In the intelligent teaching mode, students need to have strong independent learning ability. However, at present, many college students' independent learning ability is not strong. They are used to the traditional cramming teaching and lack the spirit of active learning and exploration. In the intelligent teaching environment, students need to watch videos, complete tests, participate in discussions, etc., which is a new challenge for them. Due to the lack of autonomous learning ability, many students feel lost and confused in the intelligent teaching process, and cannot effectively use these resources to improve their English level [3–5].

2.3. There are defects in the intelligent teaching platform and software
Although artificial intelligence technology has brought a lot of convenience and innovation to college English teaching, there are still some defects in the current intelligent teaching platforms and software. For example, the interface design of some platforms is not friendly enough, and the operation is complicated and cumbersome, which causes inconvenience to students and teachers. The functions of some software are not perfect enough to meet the actual needs of teaching. Some platforms have problems with data security and privacy protection, posing potential risks to students' personal information. In addition, intelligent teaching platforms and software also need to be integrated with existing teaching systems and curriculum settings. At present, some universities often lack systematic planning and design when introducing intelligent teaching platforms and software, resulting in a disconnect between these platforms and the existing teaching system and curriculum [6]. This not only affects the effect of intelligent teaching but also brings additional burden to teachers and students. Therefore, when introducing intelligent teaching platforms and software, colleges and universities need to fully consider their connection with the teaching system and curriculum to ensure that they can complement and promote each other.

2.4. Lack of teachers' information technology ability

The application of artificial intelligence technology in college English teaching requires teachers to have certain information technology abilities. However, at present, many college English teachers, especially those who have worked deeply in the field of education for many years, often feel strange and confused about the emerging information technology. They may not be familiar with the specific operation process of AI technologies and how these technologies can be combined with English teaching, thus failing to give full play to their potential in teaching. This lack of information technology ability not only limits teachers' ability to use artificial intelligence technology to enrich teaching methods and improve teaching results but also may cause them to feel powerless in an educational environment faced with rapid technological iteration. More importantly, this may affect the professional development of teachers and the continuous improvement of teaching quality, making it difficult for them to maintain the freshness and attractiveness of teaching in the face of a new generation of students [7–9].

3. The path of "empowering" college English teaching by artificial intelligence

3.1. Build an intelligent teaching resource base to promote resource sharing and exchange

Based on the application of artificial intelligence technology, the integration and processing ability of data resources has been greatly improved, which brings new possibilities for the construction of teaching resource databases. Based on this, schools should rely on artificial intelligence technology to accelerate the construction of intelligent English teaching resource database, aiming to further integrate and optimize English teaching resources through intelligent means, and promote resource sharing and exchange, to improve teaching efficiency and students' learning experience [10]. To be specific, first of all, English teachers can use artificial intelligence technology to automatically collect and organize high-quality English teaching resources at home and abroad, such as teaching materials, teaching plans, videos, audio, pictures, etc., to ensure the richness and diversity of the resource base. In this process, intelligent analysis technology can be used to classify and label the resources, to facilitate quick retrieval and acquisition by users.

Secondly, schools should build an open resource-sharing platform that allows teachers and students to upload, download and share their teaching resources. The platform should provide convenient resource upload and download functions, as well as resource evaluation and feedback mechanisms, to encourage users to contribute high-quality resources and form a virtuous circle of resources [11]. In addition, machine learning algorithms can also be used to intelligently recommend suitable teaching resources based on student users' learning history, preferences and needs, helping students find the right learning resources for themselves more quickly, so as to improve learning efficiency.

3.2. Develop personalized learning plans and provide intelligent tutoring and feedback

In AI "empowering" college English teaching, intelligent technology can be used to develop personalized learning plans for students and provide intelligent tutoring and feedback. This can not only meet students' personalized learning needs, and improve learning efficiency and learning outcomes, but also provide teachers with more convenient and efficient teaching aids. Firstly, by analyzing students' learning history, ability level, interest preference and other multidimensional data, artificial intelligence can accurately identify students' strengths and weaknesses, so as to recommend the most suitable learning resources and paths for them. Based on this, a suitable learning plan can be tailored for each student according to their unique needs and characteristics. Such a personalized learning plan not only helps to stimulate students' learning interest and

motivation but also effectively improves their learning efficiency and learning outcomes.

Secondly, traditional tutoring methods often rely on the teacher's personal experience and judgment, and it is difficult to be comprehensive, accurate and timely. Artificial intelligence, on the other hand, can analyze students' learning status and problems in real-time through advanced technologies such as natural language processing and machine learning, and provide them with immediate and accurate guidance and answers. Through intelligent tutoring methods, it can not only effectively reduce the burden of teachers, but also enable students to obtain more personalized and accurate learning support. In addition, the intelligent feedback mechanism can also monitor and evaluate students' learning outcomes in real-time, providing them with timely and objective feedback. This kind of feedback not only helps students understand their learning progress and results but also guides them to self-reflection and adjustment, thus further improving the learning effect [12–13].

3.3. Develop an intelligent teaching platform to realize intelligent classroom management

With the ability of artificial intelligence, the use of intelligent technology can optimize and reshape the traditional English classroom mode, and then create a more interactive and personalized efficient classroom. First of all, the intelligent teaching platform integrates cutting-edge technologies such as big data analysis, cloud computing, and artificial intelligence algorithms, which can capture and analyze students' learning behavior, progress, and effectiveness in real-time, and provide detailed data support for teachers. This not only helps teachers accurately grasp the teaching rhythm and adjust teaching strategies but also enables them to find and solve students' learning problems promptly, ensuring that each student can learn at the most suitable pace for them.

Secondly, based on the intelligent management function of the platform, teachers can automatically process and optimize classroom activities. From course scheduling, and homework assignment to grade management, a series of tedious administrative work can be completed automatically by the platform, which greatly reduces the non-teaching burden of teachers and enables them to focus more on teaching content and the growth of students. At the same time, intelligent management also means the upgrading of classroom interaction, through virtual teaching assistants, online discussion areas and other forms, which can effectively promote communication and cooperation between students, and create a positive learning atmosphere. In addition, the intelligent teaching platform can also provide a wealth of multimedia teaching resources, such as video tutorials, online tests, virtual laboratories, etc. These resources not only enrich the teaching means but also greatly broaden the learning horizon of students. Combined with the personalized recommendation algorithm of artificial intelligence, students can choose their learning path according to their interests and learning progress, and realize a self-driven learning mode [14].

3.4. Develop an intelligent language learning software and build a language learning environment

In the exploration of "empowering" college English teaching by artificial intelligence, the development of intelligent language learning software can optimize the language learning environment and provide students with a more personalized, efficient and interesting learning experience. First of all, in the development of intelligent language learning software, core algorithms such as speech recognition, natural language processing and machine learning can be used to evaluate students' pronunciation, grammar and vocabulary mastery in real-time, and intelligently recommend suitable learning materials and exercises according to their learning progress

and ability level. This can not only effectively improve students' language skills, but also stimulate their interest in learning, making the learning process more active.

Secondly, the software should have built-in interactive functions, such as virtual conversation partners, online role-playing, etc., to provide students with an immersive language learning environment. By simulating real scenes, students can constantly practice their oral expression and listening comprehension skills in practice, while enhancing their awareness and ability of cross-cultural communication. For example, virtual conversation partners for global travel can be set up in the software, and students can simulate travel conversations with AI partners from different countries, from booking air tickets to ordering food and asking for directions. They not only practice English but also understand the cultural differences of different countries, which greatly improves their practical language application ability and cross-cultural communication ability. This kind of interactive learning not only enriches the forms of learning but also enhances the practicability and interest of learning. In addition, the use of intelligent language learning software can also dig deeply into students' learning behaviors through big data analysis, and provide teachers with accurate teaching feedback. This helps teachers adjust teaching strategies and optimize teaching content promptly, ensuring that each student can progress at a pace that best suits them.

3.5. Strengthen teachers' information technology training and enhance their intelligent teaching ability

With the rapid development of artificial intelligence technology, its application in the field of education is increasingly widespread, but the advancement of technology can not directly translate into the improvement of teaching quality, the key lies in how teachers effectively use these technologies to optimize teaching. Therefore, to carry out systematic information technology training for English teachers in colleges and universities is not only to let them master the latest technical tools but more importantly, to cultivate their ability to use these tools for intelligent teaching. The specific training content includes how to use artificial intelligence technology to analyze learning situations, how to design personalized learning paths, how to effectively integrate intelligent teaching resources, and how to use intelligent teaching platforms for classroom management. Through the training, teachers can deeply understand the principle and application of artificial intelligence technology, to better integrate it into daily teaching [15]. At the same time, teachers also need to learn how to evaluate the effect of intelligent teaching and adjust teaching strategies promptly based on students' learning feedback to ensure teaching quality. In addition, strengthening teacher information technology training can also promote communication and cooperation among teachers, and jointly explore a new model of deep integration of artificial intelligence and English teaching.

4. Conclusion

In summary, with the continuous progress of artificial intelligence technology, its application in college English teaching is becoming more and more extensive, which has brought profound changes to the traditional teaching mode. However, although artificial intelligence technology shows great potential in college English teaching, there are still a series of difficulties in the actual application process, including the uneven popularization and application of technology, students' independent learning ability is not strong, intelligent teaching platforms and software defects, and teachers' insufficient information technology ability. In this regard, schools and teachers

should continue to deepen the application of intelligent technology in English teaching and give full play to the advantages of artificial intelligence technology to promote the innovation and development of college English teaching by constructing an intelligent teaching resource base, formulating personalized learning plans, developing intelligent teaching platforms, improving intelligent language learning software, and strengthening information technology training for teachers.

Disclosure statement

The author declares no conflict of interest.

References

[1] Liu Q, 2024, Reform and Development of English Classroom Teaching in Higher Vocational Colleges under the Integration of ChatGPT Technology. Proceedings of the 2024 Annual Academic Conference of Henan Private Education Association (Second Volume), Henan Provincial Association of Private Education: 3.

[2] Liu Z, 2019, Research on the Construction of Intelligent English Classroom in Vocational Colleges under the Background of Artificial Intelligence. English Teachers, 24(21): 137–139.

[3] Pan R, 2024, A Study on the Path of Digital Transformation of Ideology and Politics in College English Curriculum with the Assistance of Artificial Intelligence. Journal of Jiamusi Vocational College, 40(10): 157–159.

[4] Liu Z, 2024, Research on the Construction of College English Teaching Innovation Model Based on Artificial Intelligence. Henan Economic Daily, 2024-10-15(011).

[5] Zhang Y, Zhu Q, 2019, Research on the Reform of College English Teaching Mode under the Background of Artificial Intelligence. Journal of Hubei Open Vocational College, 37(19): 157–159.

[6] Ding L, 2024, Research on the Construction of New Field of College Business English Teaching under the Background of Artificial Intelligence. Journal of Hubei Open Vocational College, 37(19): 162–164.

[7] Xiao G, 2024, A Study on English Teaching in Higher Vocational Colleges under the Background of Artificial Intelligence. Journal of Hubei Open Vocational College, 37(19): 170–171+177.

[8] Zhou H, 2024, Innovation and Practice of College English Teaching Model Based on Artificial Intelligence Technology. English Plaza, 2024(29): 85–88.

[9] He H, 2024, The Innovative Application of AIGC Technology in College English Teaching. English Plaza, 2024(29): 97–100.

[10] Zhou H, 2019, ChatGPT and College English Teaching: Opportunities and Challenges of New Technology Empowerment. Journal of Jilin University of Chemical Technology, 41(6): 72–75.

[11] Xiang Y, Fang C, 2024, A Study on Multi-Modal College English Reading Teaching Mode Enabled by Artificial Intelligence Technology. Anhui Education and Research, 2024(30): 76–78.

[12] Wang M, 2024, A Study on Ways to Improve Students' Participation in College English Classes in the Era of Artificial Intelligence. Research on Foreign Language Education and Translation Development Innovation (16), Western Sichuan Literature Compilation and Research Center: 2.

[13] Wang A, 2023, Research on the Enhancement of Information-Based Teaching Competence of College English Teachers in the Era of Artificial Intelligence. Overseas English, 2023(21): 167–169.

[14] Pan X, 2023, Exploration of Innovative Models for Smart English Teaching in Higher Vocational Education under the Background of Artificial Intelligence. Overseas English, 2023(21): 232–234.

[15] Hou J, He S, Xing Q, 2023, An Exploration of AI-Assisted English Teaching from the Perspective of Vocational Education. Intelligence, 2023(31): 177–180.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.