Exploring the Path of AI Application in the Construction of Economic Management Courses

Junjie Gao*

Huzhou Vocational & Technical College, Huzhou 313000, China

Corresponding author: Junjie Gao, junjie_gao@zju.edu.cn

Abstract: With the rapid development of artificial intelligence (AI) technology, its application in the field of education has become a research hotspot. According to a research report released by the analytical firm "Research and Market", the global AI market in the education sector is expected to grow from $1 billion in 2020 to $6 billion in 2027. In economic management courses, the integration of AI technology can not only improve teaching efficiency but also deepen the learning experience of students. This article takes the construction of economic management courses in vocational colleges as the starting point, aiming to provide feasible construction paths to promote innovation in teaching methods, improve education quality and efficiency, so the students can better meet the demand for high-quality economic management talents in society.

Keywords: Artificial intelligence; Economic management education; Teaching innovation; Implementation strategy; Construction Road

1. Introduction

In today's society and economic environment, higher vocational and technical education plays a crucial role. As an important component of vocational colleges, the optimization and upgrading of teaching content and methods in economic management majors is particularly important [1]. With the rapid development of AI technology, its application in the field of education has opened up new paths and provided the possibility of innovation for traditional education models.

1.1. The current development status of AI technology in the field of education

In the field of education, AI technology has been applied in multiple fields, including:

(1) Personalized learning. By analyzing students' learning habits and abilities, AI can provide customized learning plans to maximize learning efficiency.

(2) Intelligent evaluation system. AI can automatically evaluate students' homework and exams, provide immediate feedback, help teachers understand students' mastery level, and adjust teaching strategies

accordingly.

(3) Intelligent tutoring systems. By simulating the guidance process of teachers, these systems can provide personalized tutoring for students majoring in economics and management, especially in skills training such as accounting and financial analysis [2].

The application of AI technology in the field of education can not only improve teaching efficiency and quality, but also greatly enhance students' learning experience, especially in enhancing their ability to solve practical problems. Therefore, vocational colleges should fully utilize AI technology and tools in the construction of economic management courses to meet the future demand for talent in the field of economic management.

2. Characteristics and Problems of Economic Management Courses in Vocational Colleges

Economic management courses, as an important component of the teaching system in vocational colleges, have the following significant characteristics:

(1) Strong practicality, emphasizing the combination of theory and practice.

(2) The professionalism is obvious, and the course content usually covers professional knowledge such as accounting, finance, marketing, etc.

(3) Emphasize skill orientation and focus on cultivating students' vocational skills to meet the industry's demand for high-quality technical and skilled talents [3].

In the teaching process of economic management courses, vocational colleges also face a series of problems:

(1) Firstly, limited practical teaching resources make it difficult to meet the practical learning needs of all students, and traditional teaching content and textbooks make it difficult to keep up with the pace of industry and technological development, leading to a disconnection between teaching content and actual needs.

(2) Secondly, in the context of teaching in large class sizes, students' learning initiative and efficiency are affected, and the updating of teacher skills and methods is relatively slow [4]. Some teachers find it difficult to effectively use modern technology such as AI for teaching.

(3) Finally, facing the diverse needs of students, personalized and differentiated teaching is difficult to achieve.

3. Implementation strategy

3.1. Strengthen the construction and integration of practical teaching resources

Developing virtual training platforms is an important direction to strengthen the construction of practical teaching resources. By utilizing advanced AI technology, these platforms can simulate a nearly real economic management environment, providing students with safe and efficient learning and practical space. This simulation environment has strong dynamism and can update data and situations in real time, thus simulating various dynamic changes in the market economy, allowing students to learn and practice in an approximate real market environment.

In addition, the application of big data technology has greatly enriched the content and form of practical teaching resources. By analyzing industry data, teachers and course developers can more accurately grasp industry development trends and enterprise needs, and based on this, design more practical teaching projects

and case studies [5]. In such project practice, students can not only learn the latest industry knowledge but also cultivate their data sensitivity and decision-making ability through data analysis and processing.

3.2. Update and optimize teaching content

By combining AI technology, especially natural language processing technology, a dynamically updated teaching content library can be established. This library can automatically collect, filter, and update the latest economic management knowledge and cases, ensuring the timeliness and cutting-edge nature of teaching content. Through the application of AI technology, teachers can be provided with an efficient tool to quickly select teaching materials that are suitable for their courses and student needs from a large amount of updated content, thereby achieving more personalized and accurate teaching content updates [6].

In addition, AI technology can also promote students to align with the latest economic management trends and knowledge in the process of optimizing teaching content. By establishing online learning platforms or mobile learning applications, students can have real-time access to updated teaching content and case studies, enabling them to understand industry trends and cutting-edge theories. This learning method not only enhances students' interest and initiative in learning, but also helps cultivate their self-learning ability and innovative thinking.

3.3. Improve student engagement and learning efficiency

Improving student engagement and learning efficiency is the key to achieving teaching objectives. With the development and application of AI technology, utilizing AI-assisted teaching tools and platforms has become an effective way to improve teaching effectiveness. Intelligent tutoring systems and personalized learning recommendation platforms are two typical representatives of AI-assisted teaching tools. The core advantage of these AI-assisted teaching tools lies in their ability to conduct big data analysis and machine learning, accurately identify students' learning status and needs, provide more targeted learning advice and coaching resources, and improve student engagement and learning efficiency.

3.4. Strengthen teacher skill training and innovative teaching methods

The level of mastery of AI technology and the ability to apply innovative teaching methods by teachers directly affect teaching effectiveness and student learning experience. In a survey involving 500 university teachers, 80% of respondents expressed a desire to receive more training on how to effectively utilize AI tools in teaching.

Firstly, providing training on AI technology and applications for teachers is the foundation for achieving teaching innovation. This training not only includes basic operational skills of AI tools, but more importantly, it helps teachers understand and master how to effectively integrate AI technology into teaching design and implementation. For example, training can include how to use intelligent tutoring systems to improve student learning efficiency, how to use data analysis tools to monitor student learning progress and effectiveness, etc. [7]

Secondly, it is important to encourage teachers to try new teaching models, such as flipped classrooms and project-based learning, which is an effective way to promote innovative teaching methods. Flipped classroom encourages students to learn independently before class by swapping traditional classroom teaching and homework models, while in-class time is used for discussion, clarification, and deepening understanding. Project-oriented learning involves involving students in real or simulated projects to solve real-world problems [8]. This method can not only enhance students' practical and teamwork abilities but also enhance their problem-solving abilities.

3.5. Implement personalized and differentiated teaching

According to Educause's research report, over 70% of students believe that AI and machine learning tools make their learning experience more personalized and help them master course content more effectively. The powerful data processing capabilities of AI technology make personalized teaching possible. By analyzing data such as student learning behavior, progress, and grades, AI systems can design personalized learning plans that are most suitable for each student's learning style and abilities. This differentiated teaching strategy can not only improve students' learning efficiency, but also enhance their learning motivation, helping each student achieve their maximum learning potential [9].

4. Construction path

4.1. Technology platform and resource construction

A learning management system that integrates AI technology can not only change traditional teaching and learning methods, but also greatly expand the channels for obtaining educational resources and the boundaries of learning. Therefore, building a comprehensive learning management system that includes intelligent tutoring systems, virtual training platforms, and integrating external teaching resources is particularly crucial. To achieve this goal, vocational colleges need to invest corresponding resources in the development and maintenance of system platforms, as well as establish cooperative relationships with various industry organizations, database providers, and online course platforms to ensure access to high-quality external resources. In addition, to ensure the effective utilization of these technologies and resources, it is necessary to provide corresponding training for teachers and students to enhance their ability to use these platforms and resources for teaching and learning [10].

4.2. Development of course content and teaching methods

Developing new course content and teaching methods using AI technology can better attract students' attention and improve learning efficiency. The introduction of virtual reality technology not only enhances students' interest but also helps them better understand and absorb course content better [11]. Secondly, the application of AI technology has also made project-based learning more efficient and personalized. Through intelligent algorithms, teachers can customize project tasks of different difficulty levels for each student based on their learning progress and abilities, achieving autonomous learning. In addition, AI technology can also help teachers develop richer and more diverse teaching resources.

4.3. Establish an evaluation and feedback mechanism

Establishing an AI intelligent system that can monitor and evaluate the learning process of students in real-time can provide timely feedback to them and also valuable teaching improvement basis for teachers. Firstly, this AI evaluation system can generate detailed learning progress reports for each student by analyzing various data such as student learning behavior, test scores, and engagement. Secondly, the AI evaluation system can provide teachers with teaching suggestions based on big data analysis, and teachers can adjust their teaching plans and methods based on these feedback to more effectively improve teaching effectiveness. In addition, this AI-based evaluation and feedback mechanism can also achieve long-term tracking of learning outcomes, thereby optimizing learning and teaching strategies over a longer time dimension.

4.4. Continuous technological and methodological updates

For vocational colleges, continuously updating and improving teaching techniques and methods is the key to improving the quality of education. Firstly, by regularly organizing training and seminars, teachers can timely

understand and master the latest teaching tools and methods [12]. This continuous professional development opportunity can help teachers continuously improve their teaching skills and also encourage them to try new methods in teaching practice. Secondly, encouraging students to participate in the pilot and evaluation of new technologies can not only stimulate their interest in learning but also cultivate their critical thinking and innovation abilities [13].

5. Challenges and Development Prospects

5.1. Challenges Faced

(1) Technical integration and adaptability challenges. In the process of integrating AI technology into the teaching system, ensuring that teachers and students can efficiently adapt to new technologies is a key challenge. This not only requires a significant initial investment for the purchase and maintenance of technical equipment and software but also the establishment of a systematic training plan to help teachers and students proficiently master the application of AI tools.

(2) Imbalance of educational resources. The efficient application of AI technology often requires strong hardware support and a stable network environment. However, in the reality of uneven resource allocation, this demand is difficult to meet in all vocational colleges.

(3) Data privacy and security issues. The application of AI technology in education involves the collection and processing of a large amount of student personal information and learning data. Ensuring the security of data and the protection of student privacy while promoting learning is a problem that must be faced in the process of technology application.

(4) The transformation of teacher roles and skills. The introduction of AI technology has changed the traditional teaching and learning model, and the role of teachers has shifted from being knowledge transmitters to facilitators and guides of the learning process. This transformation requires teachers not only to master relevant technical knowledge but also to have the ability to design and implement student-centered teaching activities [14].

5.2. Future development prospects

Despite facing challenges, the application prospects of AI technology in economic management courses in vocational colleges are still broad. Firstly, it is expected to achieve truly personalized learning, the development of AI technology will make education more personalized, providing customized learning content and teaching strategies based on each student's learning ability, progress, and preferences, greatly improving the effectiveness and efficiency of learning. Meanwhile, high-quality teaching resources can be more widely shared and utilized through AI technology. The construction of intelligent recommendation systems and online learning platforms will promote the flow of excellent teaching resources and provide equal learning opportunities for all students

6. Conclusion

The integration of AI technology and the construction of economic management courses in vocational colleges will be a continuous exploration and practice. This process not only requires technological innovation and updating educational concepts, but also requires us to deeply understand the essence of teaching and learning, as well as how to better serve educational goals through technological means. The application of AI technology in education goes far beyond improving teaching efficiency or achieving personalized learning paths. More importantly, it creates a brand new interactive platform for educators and learners, which not only imparts

knowledge but also stimulates innovation and cultivates students' problem-solving abilities. On this basis, the future of education will focus more on how to cultivate students' comprehensive qualities, including critical thinking, innovation ability, and the ability to adapt to future society.

Disclosure statement

The author declares no conflict of interest.

References

[1] Wang G, Chen H, 2023, Research on the Construction Path of Management Majors in Private Universities Based on Sustainable Development. Business Exhibition Economics, 2023(17): 149–152.

[2] Wang L, 2022, Exploring the Path of Ideological and Political Construction in the Finance Course of Applied Universities. Chinese Science and Technology Journal Database (Citation Edition) Education Science, 2022(10): 4.

[3] Yue M, Qiao Y, 2023, Research on the Path Selection for the Construction of New Majors in Economics and Finance from the Perspective of New Liberal Arts. Science and Technology Information, 21(9): 173–176.

[4] Xiong Y, Kang L, 2021, Reflections on the Systematic Curriculum Development of Economic Management Majors in Higher Vocational Education. Winning Future, 2021(21): 61–62

[5] Zheng Z, 2022, Analysis of the Current Situation and Selection Optimization Strategies of Economic and Management Reading Materials. 2022(4): 17–19.

[6] Guo M, 2019, Exploration of the Path for the Construction of Macroeconomic Management System in Geological Exploration in the New Era. Management Observation, 2019(4): 88–89.

[7] Wang M, 2019, Exploration on Teaching Mode Reform of E-commerce Management Courses under "Internet plus Education." Industry and Technology Forum, 2019(12): 213–214.

[8] Ma Y, 2019, Research on the Application of Layered Teaching Mode in Operations Research Courses for Economic Management Majors. Industry and Technology Forum, 2019(5): 214–215.

[9] Li L, 2019, Research on Brand Culture Construction Strategies for Economic and Management Vocational Colleges in China. Brand Research, 2019(18): 72–73.

[10] Wang X, 2020, Research on the Application of Big Data Statistics in the Field of Economic Management. Science and Technology Innovation and Productivity, 2020(1): 38–40 + 43.

[11] Miao Z, 2019, Modernization of Economic Management and Development of Economic Management. China Science and Technology Investment, 2019(19): 166.

[12] Gan L, 2019, Exploring the Development Fields and Prospects of AI Artificial Intelligence. China Science and Technology Investment, 2019(22): 295.

[13] Zhao G, 2020, Research on AI-based intelligent on-site management system. China Science and Technology Investment, 2020(11): 97–98.

[14] Xu C, Dai Y, Guo J, 2019, Planning and Exploration of Bilingual Excellent Course in Construction Management. Modern Commerce and Industry, 2019(6): 06–81.