

Application and Innovation of Artificial Intelligence in Economics and Management Courses in Universities

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Abstract

In today's era, artificial intelligence has become a new engine to promote economic and social development, and has been widely used in many scenarios. In order to ensure that artificial intelligence technology can better serve students and teachers, and improve the teaching effect, this paper will be from the artificial intelligence in the university management course of education teaching situation, application principle, innovation mode, analysis of the influence of artificial intelligence on education teaching and effect, and then according to the artificial intelligence technology application of existing problems and deficiencies, put forward optimization Suggestions and strategies. The remainder of the study report is structured as follows.

Keywords

Artificial Intelligence, Colleges and Universities, Major in Economic Management, Application and Innovation

1. Introduction & Literature Review

1.1. Introduction

With the rapid development of science and technology, the application of artificial intelligence in college teaching is more and more extensive. Among them, AIGC is a new artificial Intelligence technology, and its full name is artificial intelligence, generative Content, that is, artificial intelligence generates content. Its core idea is to use the artificial intelligence model to automatically generate various types of text, images, audio, video and other content according to the given conditions such as theme, keywords, format and style. ChatGPT is a natural language processing model developed by OpenAI, which is designed to under-

stand and generate natural language texts, and can be used to answer questions, generate texts, conduct dialogues and perform other text-related tasks. It plays an important role in many fields, especially in education. These technologies not only improve the teaching efficiency, but also improve the learning effect.

The progress of artificial intelligence related algorithms and the breakthrough of computing power have made great progress in imitating, extending and expanding human listening, speaking, reading and writing abilities, and the cultural value of artificial intelligence has been strengthened, which has provided a powerful internal motive force for the coordinated development of industry and technology and educational reform.

1.2. Literature Review

In foreign countries, many scholars have made exploratory research on basic principles and breaking boundaries.

In China, many scholars have made meaningful discussions on technology integration and application scenario docking.

Especially in 2022-2023, it set off a new wave in the application of AI technology. Many companies are making their own big language models, including ERNIE Bot, Qwen, Lark Language Model, Genimi, Tiangong Model, Mixed Element Model, ChatGLM2, Llama2, GPT-4, GPT-3.5, Hundred Rivers Model and so on. Large-scale models are constantly evolving, from a single chat conversation form to a multi-modal form, and the capabilities of models such as Wenshengtu, Wenshengtu, Wenshengtu and Wenshengvideo are getting stronger and stronger, and the AIGC+ industry scenes are gradually enriched.

These achievements provide a solid theoretical basis for this paper. On this basis, this paper will continue to explore how artificial intelligence can better help the development of education by taking the performance of artificial intelligence in the study of economics and management in colleges and universities as the starting point.

2. Application and Influence of Artificial Intelligence in Economic Management Courses in Colleges and Universities

2.1. Development Situation

In the field of education, artificial intelligence represented by CHATGPT and AIGC has some applications in the field of education and teaching, including: textbook compilation, outline generation, video courseware generation, virtual teacher, courseware note generation, intelligent question answering, homework paper correction, intelligent evaluation, real-time tracking and feedback, and related scene-based exercises and simulations. The following article will list several of them for detailed explanation.

2.1.1. Application of Virtual Teachers

In the learning environment created by artificial intelligence, virtual teachers

with human appearance, language and movements are created and applied by many schools, which not only enhances students' interactive experience, but also provides students with rich teaching resources and forms personalized and intelligent teaching guidance, thus improving teaching quality. (See **Figure 1**)

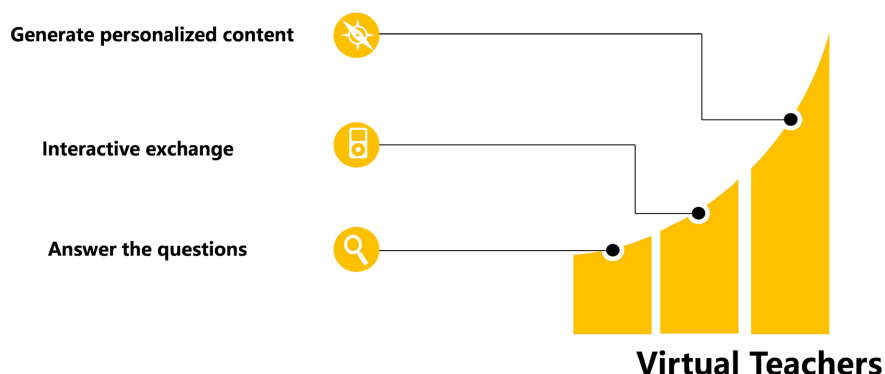


Figure 1. The development process of AI applied to education is roughly divided into three steps.

The development and application of virtual teachers is gradual. The most basic thing is that they can answer students' questions, which is equivalent to the function of Baidu or Zhihu. Then there is advanced interaction and communication. At this time, it is no longer limited to answering a single question, but can communicate with students in a more complicated and logical way, and learn to imitate the way of thinking of human beings in the process; Finally, it is able to generate personalized content according to students' learning needs and ability level through students' personal information and learning data, such as making learning plans. This is a higher challenge, and the significance of applying it to education lies in that virtual teachers are not limited to fixed or revised single answers, but can also write more complicated tutorial teaching plans by themselves, and even organize teaching and other classroom activities. (Netease News, 2024) Virtual teachers can also express feelings and emotions, enhance the interactivity and interest of teaching, and stimulate students' interest and motivation in learning. (Huang, 2024)

2.1.2. Intelligent Courseware Generation

Using artificial intelligence to generate courseware means that AI automatically creates and designs slides through algorithms and machine learning, which can help teachers to make teaching courseware quickly and improve teaching effect in the field of education. This can not only save time and resources, but also make the content of the courseware professional, clear and easy to understand. Teachers input data and information according to teaching needs, such as the subject of the report, target audience, main data points, etc., and then the system generates slides and visual charts according to these data, so teachers can devote more energy to focusing on the key contents of the report. At the same time, the system also has the function of emotion analysis and collaborative creation,

which can understand the emotion behind the teacher and the text, thus improving the accuracy of the content, and also allowing users to feedback the revision opinions in time to realize the interaction between human beings and machines.

2.1.3. Intelligent Teaching Evaluation and Feedback System

The intelligent teaching evaluation and feedback system is a tool that uses artificial intelligence technology to improve the quality and efficiency of education. Intelligent teaching evaluation and feedback system can timely and accurately evaluate the teaching quality of the course in depth. This kind of system can collect data in a variety of ways, such as students' learning behavior, test scores, classroom interactions, etc., and then use these data for analysis to provide valuable feedback and suggestions to teachers, students, and school management.

2.2. Principle of Innovation

Wisdom education in today's era relies on the deep integration of artificial intelligence and education, and uses new technologies in the whole process of education. Artificial intelligence has a broad application prospect in the field of economic management, which can provide intelligent support and empowerment for related learning and work. Especially in optimizing decision-making process, business intelligence, economic decision-making, providing research tools, assisting teaching reform, and providing platform-based support, it has made sustained development.

2.2.1. For the Basic Environment

In terms of basic environment, the combination of artificial intelligence and education strengthens the construction of information technology infrastructure, and relies on technical support such as network coverage, cloud computing and big data to provide a reliable technical foundation and resource guarantee for school courses. Use artificial intelligence technology and advanced equipment to provide teachers and students with an immersive and simulated learning environment. In such an intelligent education environment, students can actively participate in learning activities and gain personalized learning experience through interaction and cooperation with intelligent education system. At the same time, the education system can also provide personalized learning programs and resources according to students' learning needs. The most important thing is to automatically match the appropriate learning content by analyzing students' learning data and scores. The education system can monitor and analyze students' learning behavior and performance through artificial intelligence technology, and provide intelligent counseling and personalized learning feedback.

2.2.2. For the Hardware Environment

In terms of hardware environment, artificial intelligence technology can provide personalized learning and teaching support for students and teachers. Some hardware devices, such as computers, tablets, smart phones, etc., make it easier

for students to use smart education software and applications for online learning, acquisition of teaching resources and interactive communication.

2.2.3. For the Software Environment

In addition to adequate hardware environment, software environment also plays a key role in the application of artificial intelligence in colleges and universities. The software environment includes educational application software, learning management system and intelligent teaching platform, which all provide rich learning resources and technical operation for education. Educational application software can provide students with personalized learning resources, including online courses, electronic textbooks, learning games, intelligent exercises and so on. These applications combine artificial intelligence and big data technology, and can accurately customize learning content according to students' learning characteristics and needs. At the same time, all kinds of educational application software can also meet the learning needs of different students, realize the popularization of personalized learning and improve learning efficiency (Yang, 2024). (See Figure 2)

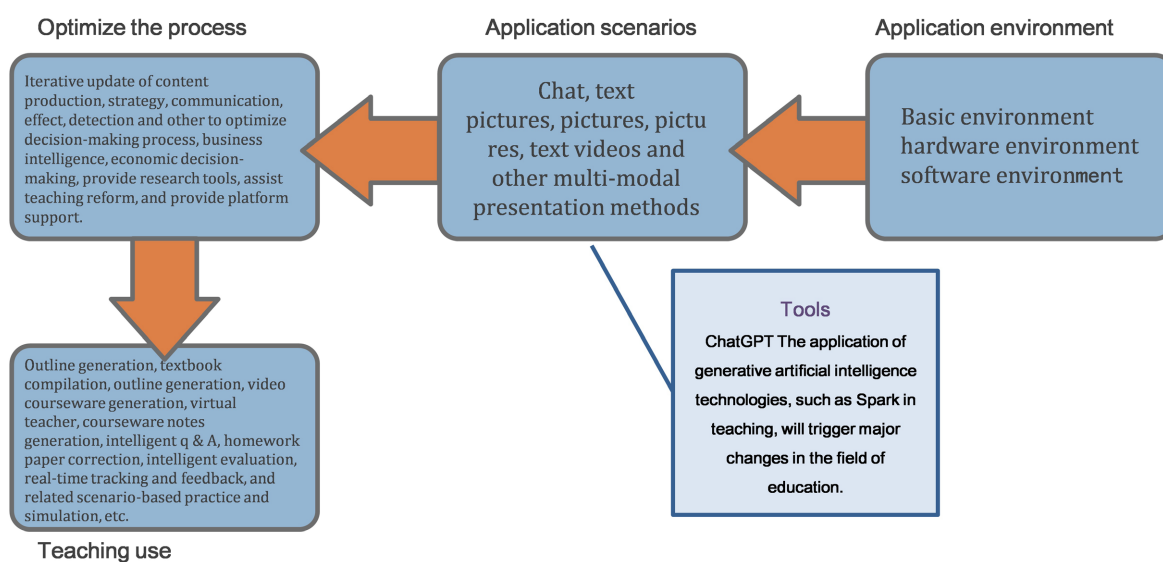


Figure 2. Innovation process and principle.

2.3. Positive Impact

1) Innovate the traditional education mode to adapt to the prospect of social development. At present, with the emergence of artificial intelligence, modern educational technology has been further improved, and the means, methods and tools of education have all improved the teaching efficiency. Chat GPT Intervention in higher education also promotes interdisciplinary integration. At present, the social structure is gradually complex, and the employment situation is grim. In the traditional way, it is difficult to make breakthrough innovation, and it cannot cultivate compound talents. Therefore, we need to promote the integrated development of disciplines, while Chat GPT plays an important role in pro-

moting it. The advantages of large data scale and system improvement make AI serve as a “bridge” in the process of the integration and communication of disciplines, guiding the joint construction and sharing among various disciplines and breaking down barriers.

2) Improve learning methods and improve learning quality. Current learning tools are relatively simple, but students have the ability to quickly accept new tools. Therefore, this easy-to-use and efficient-to-use auxiliary tool is popular and easily accepted, which improves students’ initiative in learning. (Wei & Zou, 2024)

3) Reduce teaching costs and increase learning opportunities. By breaking through many time and spatial limitations, AI can overcome the effects of many uncertainties in learning while producing high levels of results. Moreover, AI allows anything to be a learning opportunity. Such as the Bradfield Institute of Technology Department and teaching personnel in the outbreak, through history, science and geography to create their own teaching scenarios based on virtual reality, let students experience the details of these subjects, this is never realized before, and the students’ feedback is good. (He, Ding, & Zhang, 2022)

3. Problems and Hidden Dangers

Although there are a lot of advantages in artificial intelligence in universities, fundamentally, it is only invented by human beings, not a real “brain”. Therefore, there are still many defects, which brings certain risks and challenges to higher education.

3.1. Hidden Danger

The security risks of AI in education include privacy leakage, data security, algorithmic bias, and information abuse.

First of all, in terms of privacy disclosure, due to the personal information of teachers and students, and artificial intelligence, information collection and information dissemination, it is likely to generate feedback information and answer questions (Wei & Zou, 2024); publicly available generative tools may expose proprietary or sensitive information to unauthorized third party use, more malicious behind, will contain the copyright protected content and random destruction or tamper with authorized data. All these have caused a bad impact on colleges and universities, and brought hidden dangers for the promotion of the teaching process.

Second, there is a risk of algorithm bias. Algorithmic bias refers to the bias or unfairness of an algorithm or computer program in processing data or making decisions. This bias may be due to data imbalance, algorithm design defects, or bias in the training data. Algorithmic bias may come from the limited model of AI itself, and the knowledge bias due to imperfect technology.

3.2. Ethical and Moral Hazard

The emerging and rapidly developing AI technology itself is not perfect, and the

relevant domestic norms, standards, laws and regulations often lag behind the pace of technology, so there will inevitably be certain risks in the ethical and legal aspects of AI.

The data set behind generative AI may contain wrong information, so it may give wrong answers when dealing with questions, generating wrong information to mislead humans. In addition, if the use is not controlled, excessive reliance on generative artificial intelligence to complete academic tasks is easy to make students unwilling to think independently, produce thinking inertia, and affect the development of innovation and discrimination. (Sun, Wang, & Shang, 2024)

3.3. The Distribution and Fairness of Social Resources

The imbalance in the allocation of higher education resources in China has always been there, which is reflected in the difference in the application degree of information and network technology in different regions, thus resulting in the information gap. Moreover, the application cost of the generative AI model is relatively high, which further leads to the development trend of the gap between the rich and the poor and the imbalance and inadequacy. Artificial intelligence is not yet universal to all students, which aggravates the injustice of education and causes a new problem of educational equity. (Wang, Li, & 2024)

4. Countermeasures and Suggestions

Economics and management major is a traditional and basic professional subject with strong application. The development of artificial intelligence and the combination of this discipline is particularly important for the development of education. According to the problems raised and the actual needs, the following improvement strategies are proposed.

4.1. Standardize the Application of Artificial Intelligence and Improve Relevant Laws and Regulations

Laws and regulations require both technology developers and users. Government departments are the regulators of generative artificial intelligence false information, and they need to formulate regulatory policies for generative artificial intelligence false information. On the one hand, we should correctly grasp the path of artificial intelligence into universities to ensure the security and transparency of its origin, without threat or unknown purpose. On the other hand, the management department can, through the risk prediction, preset the possible problems in advance, make special legislation and special regulations for the behaviors that may produce data leakage and infringement, establish and improve the punishment mechanism, and increase the intensity of punishment. Users can be required to be responsible for the content generated and conduct a strict audit.

Education authorities also need to establish a complete and stricter AI management system for educational applications on the basis of existing policies to ensure that their development and use meet strict data security and privacy pro-

tection standards.

4.2. Consolidate the Technical Foundation and Optimize the Teaching System

In the combination of artificial intelligence and higher education, teachers are required to improve their technical ability, master and apply various digital platforms and tools, and then integrate artificial intelligence into the teaching, to realize data resource sharing, increase the number and performance of servers, timely update the software and hardware equipment, and establish a perfect system maintenance system to improve the teaching experience.

In terms of designing the teaching system, it is necessary to increase the proportion of digital intelligence courses, combine emerging technologies such as multiple AI, cloud computing and collaborative interaction, constantly conduct professional talent training, update the existing curriculum mode, appropriately increase the relevant artificial intelligence courses for students to learn, and strive to make every student master the digital intelligence technology. In terms of teachers, more professional teachers should be trained, fully collect the existing teacher resources, and introduce excellent external professional talents. (Li, Wang, Chen et al., 2023)

Finally, the government should expand the application scope of AI, and strive to make the development and application of AI technology universal to universities in more regions, and reduce the gap in education level caused by different economic development status, so as to achieve educational equity.

4.3. Adhere to the Principle of Moderation, to Ensure That the Main Body of Education

In the final analysis, education still needs to rely on the real classroom to complete, schools cannot be separated from the real classroom, textbooks, or teachers. Teachers and students should still keep a rational and clear mind in the face of virtual generated things, and be able to distinguish what is intelligently generated and what is created by human beings. Teachers and students should have an accurate understanding of the use of generative AI, so that AI can empower teachers and students rather than replace them. At the same time, we should understand that education is not only about the dissemination and receiving of knowledge, and schools are not a place for mechanical communication. The purpose of higher education is to cultivate students "personal ability and improve teachers" teaching ability. If the education process is too dependent on technology, it will also lead to the loss of emotional interaction and social learning opportunities with teachers and classmates, which will affect their overall development. Therefore, it is necessary to ensure the dominant position of teachers in teaching and the dominant position of students in education, increase the humanistic care and emotional interaction between teachers and students, prevent excessive participation of artificial intelligence, prevent teachers from issuing orders and imparting knowledge completely through intelligent

devices, and prevent students from directly using artificial intelligence to obtain answers. (Wei & Zou, 2024)

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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