The Application and Research of Artificial Intelligence in the Teaching of Private Universities

Yang Gao

College of Urban, Liaoning Communication University, Shenyang, 110136, Liaoning, China

Abstract: Artificial intelligence promotes the development of private colleges and universities. In addition to enabling the development of teaching and research management in private colleges and universities, there are also many potential risks to a certain extent. This paper analyzes and studies the advantages of artificial intelligence in the teaching of private universities and the problems in the current application, thus pointing out that artificial intelligence is a double-edged sword, and how to make good use of this double-edged sword is a long way to go.

1. Introduction

The theme of the 2022 International Conference on Artificial Intelligence and Education is "Guiding Artificial Intelligence to Empower Teachers and Lead the Upgrading of Teaching Intelligence". The convening of this conference fully demonstrates the role of artificial intelligence in education, as it is driving educational transformation and empowering educational change. Therefore, private universities need to enhance the digital literacy of teachers and students in mastering artificial intelligence, strengthen innovation in teaching and research management based on artificial intelligence, and deepen innovation in teaching and research management systems empowered by artificial intelligence. This also provides many challenges for the development of private universities.

As is well known, there are many differences in teaching between private and public universities. The teaching methods of private universities are more flexible. The traditional teaching models or methods in private universities have significant development limitations, which restrict the coordinated and orderly promotion of various work in private universities In the "2022 Horizon Report: Teaching and Learning Edition" released by the American Higher Education Informatization Association, artificial intelligence is listed as a key technology that will affect the future development of higher education[1].

With the rapid development of information technology, artificial intelligence technology continues to iterate and upgrade. Intelligent technologies such as Chat GPT and AIGC have become important forces driving social progress. They are a way to generate content using artificial intelligence technology, which involves multiple technical fields. It has significant technological advantages in creativity, expressiveness, and creative speed, and is currently a hot topic pursued by major private higher education institutions.

2. Advantages of AI in private colleges and universities

2.1. Optimize the teaching scheme

During holidays or various teaching competitions, teachers need to prepare teaching outlines, lesson plans, calendars, and many other related teaching materials in advance. In order to make the classroom more scripted, they need to consult a large amount of information and data. Sometimes, they spend one or two hours researching to match a beautiful picture, putting in a lot of effort. This is all very common. Moreover, during the production of courseware, if the PPT template is not updated in a timely manner or the content is outdated, it does not conform to the development of the current era, resulting in poor course effectiveness, lack of student interest, low participation, and

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decreased course quality. In the end, all efforts and efforts are in vain. At this point, the emergence of artificial intelligence greatly solved such problems. Chat GPT is a typical representative. Chat GPT is a natural language processing tool driven by artificial intelligence technology. It can generate answers based on the patterns and statistical rules seen in the pre training stage, and interact with each other based on the context of the chat. It is very convenient to chat and communicate like humans. It has strong retrieval capabilities and can provide teachers with rich teaching resources, improving their work efficiency.

2.2. Drive personalized learning

With the development of the Internet and the emergence of a large number of big data and various new technologies, the way of teaching and learning is also changing quietly. Personalized learning is needed in the 21st century, and it is also a new trend for college students to learn. The development of educational informatization provides the possibility for the realization of personalized learning needs. Promoting personalized development of learners is one of the fundamental characteristics of education in the information technology era and an important means of cultivating innovative talents.[2]As educators, we need to capture students' interests, stimulate their learning enthusiasm, create situational teaching, and cultivate good habits of lifelong learning.

The high-end form of educational informatization is intelligent education. Building an artificial intelligence education environment, transforming traditional teaching methods, and promoting systematic changes in education are the primary goals of artificial intelligence education applications. Artificial intelligence education can set up virtual learning environments, carry out situational teaching, make curriculum design more scripted, transform passive learning into active learning, and make students more willing to accept it. Immerse students in the process of self-directed learning and actively explore. For example, the course of Landscape Botany combines online and offline teaching through the Chaoxing platform. Students are notified, assigned tasks, surveyed, discussed topics, and practiced in question banks on the platform, which greatly enhances communication between teaching and learning.[3] Finally, through intelligent assessment and big data statistics, timely feedback on teaching and learning can be provided, and students' learning habits can be studied to enable them to have a profound understanding and mastery of their own learning situation, thereby promoting personalized development.

2.3. Intelligent teaching management

Firstly, determine the management plan based on the requirements and goals of the school. Secondly, the application of artificial intelligence can make teaching management more efficient according to management plans, thereby simplifying the process of teaching management, reducing the cost of teaching management, and improving the level of teaching management. In practical teaching management, the use of artificial intelligence technology can make management more fair and just, and make management personnel more responsible. Finally, an intelligent management system can make management data public, allowing teachers, students, parents, and others to participate in teaching management, and enabling teaching management to be supervised and serviced by everyone.

2.4. Restructuring of educational structure

Artificial intelligence education is quietly changing the structure and methods of education, and traditional education is no longer applicable. University teachers need to liberate themselves from the traditional idea of "imparting knowledge and solving problems". Moreover, university teachers should actively respond to the challenges brought by this technology, plan according to the situation, and act accordingly to achieve human-machine co teaching, co learning, and co creation.[4]College teachers should develop from multiple aspects, continuously improve their application of smart education, explore knowledge systems, sort out and polish professional knowledge, and learn to adapt.

3. Problems in artificial intelligence in private universities

3.1. Focus on science and technology, less content

Many university teachers, in order to seize the advantages of artificial intelligence, have packaged their teaching content in various forms, calling it "smart teaching". It can be said that a lot of effort has been put into the teaching form, but the content is not innovative enough, there is no integration of new teaching resources, and there is no fundamental solution to educational problems. And the traces of technology are becoming increasingly evident, as if one does not need to personally participate, but rather uses technology to replace it. This kind of education has lost its traditional charm. We advocate innovation, but it is by no means traditional without reservation.

A good course is designed to attract students' attention, but of course, this does not simply come from the dazzling technology. If every course is built on the dazzling technology without paying attention to the essence of the content, over time, it will cause visual fatigue, aesthetic fatigue, and so on. Without learning practical knowledge, it is difficult to develop empathy with students, and gradually, students will lose interest in learning.

3.2. Artificial intelligence products are highly controversial

Artificial intelligence has a significant impact on college students. For example, near the end of the term or graduation, students need to set a topic and search for information online to write a paper. Students are under great pressure. If it is a text type, students often use software such as "ERNIE Bot" to identify the title, and then the software will search and reorganize the relevant title resources according to the needs of users, and then automatically edit the article online to directly present a complete article. Image based assignments, such as AI software, automatically recognize and integrate images based on the requester's description, and finally fuse multiple image related elements to present a new image. These software have efficiently fulfilled our needs, but who exactly owns the copyright of artificial intelligence generated products, and how is this defined? What are the criteria for defining? Also, university teachers and students often invest a lot of energy and time in writing articles or searching for information. Using artificial intelligence can indeed improve work efficiency, but if all of them are handled by artificial intelligence, wouldn't all the articles or images be pieced together and become a composite of various original works? Where is human thinking? Without wholehearted dedication, teachers cannot produce high-quality scientific research, and students cannot produce excellent homework works. Over time, teachers' academic abilities will deteriorate, their knowledge reserves will dry up, and difficult problems will not be fundamentally solved. Instead, they will accumulate more, and the less good they are at thinking, the less likely they are to think. Human laziness will also become increasingly apparent, and teachers and students will become increasingly dependent on artificial intelligence and unable to extricate themselves.

3.3. Network information security needs to be strengthened

Artificial intelligence cannot do without the network, because the network is public and a shared platform. So the network will be attacked by various viruses. Once attacked by a virus, data will be lost and the network will be paralyzed. And some small plugins come with viruses and tempting links, such as advertisements, games, etc. If accidentally clicked, the information will be leaked. At the same time, some hackers may also attack computers, causing damage to the CPU and preventing the computer from functioning properly. In the process of smart teaching, university teachers use platforms such as Chaoxing to import class students into the platform, such as student names, student IDs, and phone numbers, and some even set their own avatars. And there will be scores or comments for each assignment. So can these personal privacy related content or encrypted information be guaranteed not to be leaked? This poses challenges to both network operation and security.

4. Solve problems

4.1. Integrated development of artificial intelligence technology and education

At the level of educational philosophy, the majority of thinking is still based on the teaching mode of knowledge transmission in the industrial era, rather than the educational philosophy dominated by core competencies in the intelligent era.[5] Traditional education is face-to-face teaching, and the teacher's teaching style and actions can have an emotional impact on students. However, human-machine dialogue lacks emotions, which is a drawback of artificial intelligence. This indicates that traditional teaching still dominates, while artificial intelligence can only serve as a teaching tool to assist teaching. But what is the proportion of artificial intelligence in education? This should be designed according to the actual needs of teaching, rather than blindly labeling teaching as "intelligent". For example, the teacher's lesson plan writing, what to teach, and how to teach all need to be controlled by the teacher themselves. In order to make the classroom content more colorful, artificial intelligence can be used to assist. In short, combining artificial intelligence with education is the key to better development.

4.2. The source of AI products needs to be clear

Artificial intelligence products can be text or images. In terms of writing, the main focus is on academic papers. Teachers and students need to publish papers for scientific research, and graduates also need to write their graduation thesis. In the early stages of writing a thesis, we need to consult a large amount of relevant information to lay the foundation for our own paper. If we agree with certain viewpoints of a certain paper, we can cite them and finally write the source of the citation after the reference. This is a respect for the original author and also indicates that our article is based on previous research and has reference value, not a closed door creation. When writing articles, artificial intelligence collects and integrates related content such as the theme of the article, but the integration of these resources does not indicate the source, resulting in disrespect for the original creators and plagiarism of academic achievements. Therefore, it is necessary to strengthen the annotation of original works by artificial intelligence in order to promote the development of artificial intelligence. In terms of images, images are generally works of art, which refer to two-dimensional or three-dimensional aesthetic works of art composed of lines, colors, or other forms such as painting, calligraphy, sculpture, etc.[6]

These art works are all overlaid and integrated on the basis of original graphics, elements, and forms, making the images more realistic and the colors more vivid. This also goes against the original intention of the creators, which is originality. The term "uniqueness" here does not require the works to be unprecedented, but emphasizes that the works must be independently conceived and completed by the author, rather than simply imitating or plagiarizing others. Granting the copyright of works generated by artificial intelligence to designers is not only a respect for their creative labor, but also a necessary measure to protect their legitimate rights and interests.[7] This allocation of rights is not only conducive to stimulating designers' innovation enthusiasm, but also promotes the healthy development of artificial intelligence technology, while also complying with the basic principles of intellectual property legal system.

4.3. Establish a comprehensive network security operation mechanism

The Internet is an open platform, providing a shared hub for teachers and students. Digital teaching platforms require scientific management to operate efficiently. At present, many administrative departments of private universities have ownership rights over digital resources and have roles such as administrators, teachers, and students for accessing information and document resources. This is more conducive to management and also facilitates the protection of resources and information.

Technicians should strengthen the application of artificial intelligence technology, do a good job in analyzing network attacks, explore the characteristics and commonalities of network attacks, analyze the evolution direction of attacks, formulate targeted defense measures, and improve the level of network security defense. [8] And it is also necessary to update antivirus software in a

timely manner, because in addition to antivirus functions, antivirus software also has real-time monitoring and vulnerability search functions. Once vulnerabilities are discovered, they can be patched in a timely manner. Finally, technicians need to regularly maintain and manage computers and software, encrypt important files, and increase the difficulty of encryption according to personal needs, such as facial recognition, SMS verification, etc. Although this process may be a bit cumbersome, it is still necessary to ensure network security. Finally, let the majority of teachers and students establish a good awareness of safety protection, regularly organize technical personnel training, and educate and publicize the majority of teachers and students.

Administrators are responsible for maintaining network security and need to track and detect data from various resources on a daily basis. Once problems are discovered, they should be dealt with in a timely manner and never allow the loss of resources or the leakage of personal information; Teachers are responsible for the construction of courses and the transmission of documents and assignments, as well as daily management of students; Students are responsible for fully utilizing online resources for self-directed learning, uploading assignments, posting discussions, checking grades, etc. These are all part of role division management. If each role fully utilizes their responsibilities, network security will be smooth and teaching will develop in an orderly manner.

4.4. Intelligentization of Teaching and Learning

The design of personalized learning paths in traditional education models often results in uniform learning progress and methods for students, making it difficult to meet the individual needs of different students. Through artificial intelligence, private universities can design personalized learning paths. Specific measures include: data-driven learning analysis: using big data technology, schools can analyze students' learning records, grades, and interests, and then develop personalized learning plans. For example, through the data collected by the Learning Management System (LMS), AI can identify students' strengths and weaknesses and provide customized course recommendations for each student. Intelligent tutoring system: Establish an online tutoring system based on artificial intelligence, providing 24/7 learning support. This system can use natural language processing technology to understand students' problems and provide real-time feedback, helping students solve their learning difficulties. The construction of virtual learning environment: Through virtual reality (VR) and augmented reality (AR) technology, an immersive learning environment is created to enable students to actively participate in the learning process. For example, medical students can simulate surgical operations through VR without relying on real patients. Traditional assessment methods rely heavily on paper and pencil exams, which cannot fully reflect students' comprehensive qualities and abilities. Artificial intelligence can help private universities establish a more scientific evaluation and feedback mechanism: intelligent examination system: using AI technology, developing an intelligent examination system, adopting adaptive testing, dynamically adjusting the difficulty of questions based on students' answers, thereby more accurately evaluating students' knowledge level. Multi dimensional evaluation system: By collecting and analyzing multidimensional data on students' classroom performance, homework submission, project participation, etc., a comprehensive evaluation system is established. This evaluation is not limited to academic performance, but can also consider students' soft skills such as innovation ability and teamwork ability. Timely and effective feedback mechanism: Through intelligent analysis tools, teachers can obtain real-time feedback on students' learning situation during the teaching process, adjust teaching strategies and content in a timely manner, and improve teaching effectiveness.

4.5. Intelligent management and service

One is the construction of an intelligent campus management system. With the increase in the number of students, the management tasks of private universities have become increasingly heavy. Artificial intelligence can improve management efficiency through intelligent campus management systems: intelligent scheduling system: using AI algorithms to optimize course scheduling, avoid time conflicts, and improve the efficiency of classroom resource utilization. The system can automatically generate the optimal course scheduling plan based on factors such as the teacher's

teaching style and students' course selection situation. Intelligent enrollment analysis: Through data mining technology, analyze the application behavior and trends of potential students, and help the enrollment department formulate more effective enrollment strategies. For example, AI can predict which majors are more popular and which regions have higher student application willingness, thereby allocating resources reasonably. Campus security monitoring: Utilizing intelligent monitoring systems combined with facial recognition technology to improve the efficiency of campus security management. The system can monitor security risks on campus in real time and respond quickly in case of accidents, ensuring the safety of teachers and students. The second is the development of an intelligent service platform. The service quality of private universities directly affects student satisfaction and the reputation of the school. Through artificial intelligence, an intelligent service platform can be built to improve service quality: Intelligent customer service system: Build an online customer service system based on artificial intelligence to answer students' questions in learning, life, and other aspects. This system can understand students' needs and provide accurate information through natural language processing technology. Intelligent social platform: Develop campus social platforms, use AI algorithms to recommend like-minded classmates, promote interaction and cooperation among students, and enhance campus atmosphere. Psychological Health Services: Utilizing AI technology to establish a psychological health prediction and intervention system, identifying students with psychological problems through big data analysis, and providing timely psychological counseling and support.

5. Conclusion

With the development of the information age, artificial intelligence is playing an increasingly important role in teaching in private universities. It can reorganize teaching resources, intelligently manage teaching, drive personalized learning, optimize teaching reform, and take the education of private universities to a new level. At the same time, artificial intelligence education also brings educational risks. In summary, artificial intelligence education is a double-edged sword, and how to make good use of it is a long and arduous task. The application of artificial intelligence provides new directions for the teaching, management, and services of private universities. Through the design of personalized learning paths and the construction of intelligent management systems, private universities can improve the quality of education while enhancing management efficiency and service levels. However, the application of artificial intelligence also needs to pay attention to data privacy protection and ethical issues to ensure the healthy development of the technology. Therefore, private universities should be cautious in promoting the application of artificial intelligence, and formulate corresponding norms and policies to achieve sustainable development.

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