The Application Path Exploration of ChatGPT in the Field of Higher Education

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Abstract: With the rapid development of artificial intelligence technology, ChatGPT, as an advanced natural language processing model, has shown great application potential in the field of higher education. In the field of higher education, ChatGPT not only plays an important role in promoting education and teaching, personnel training, scientific research and production, and evaluation management, but also the technological breakthrough and innovation behind it will promote the process of digital transformation of education. At the same time, the intervention of ChatGPT can not only fully activate students' interest in learning but also effectively cultivate their independent learning ability and lifelong learning awareness, so that they can better adapt to future social development. In this regard, this paper first describes the application advantages of ChatGPT in the field of higher education, and then analyzes the challenges faced by the application of ChatGPT in the field of higher education, and finally puts forward effective application paths, in order to provide some references for relevant education researchers.

Keywords: ChatGPT; Artificial intelligence; Higher education; Application path

1. ChatGPT's application advantages in the field of higher education

1.1. It is conducive to the innovation of higher education models

In today's era of rapid advancements in information technology, the emergence and widespread application of ChatGPT across various industries have become prominent. Higher education must align with these modern trends. First, integrating ChatGPT into higher education can significantly enhance the optimization of "intelligent education." Unlike traditional educational models, intelligent education relies heavily on computers and information technologies for instructional activities, meaning its success is closely linked to progress in information technology. As the most advanced intelligent tool currently available, ChatGPT can fundamentally improve and upgrade intelligent education, effectively supporting the transformation of higher education models and fostering an excellent educational environment to boost institutional quality. Second, incorporating ChatGPT facilitates interdisciplinary integration, promoting cross-field collaboration [1].

1.2. Help to improve students' learning tools

As the information age arrives, a variety of information-based learning tools have been developed. These tools not only bring about a significant advancement in the reform of higher vocational education but also enhance the convenience of students' learning experiences. Currently, the majority of students are capable of skillfully utilizing these digital learning resources. However, the range of available tools remains relatively limited, making it challenging to satisfy students' increasingly diverse learning requirements. The wide application of ChatGPT can effectively improve this deficiency. First, the approach to learning has significantly enhanced. Students are now able to skillfully utilize information-based learning tools during class for completing assigned tasks and can also engage in self-directed learning outside of class using these tools. Additionally, it fosters students' accumulation of knowledge. In prior educational practices, teachers often focused on having students memorize factual knowledge, which could readily place them in a position of passive learning. ChatGPT facilitates the examination, enhancement, and innovation of knowledge structures. This not only boosts the accumulation of declarative knowledge but also enhances the comprehension of procedural knowledge, thereby achieving a fusion of "dynamic" and "static" elements. As a result, it supports the continued improvement of students' learning efficiency [2].

2. Challenges of ChatGPT application in the field of higher education

2.1. Difficulty in identifying the reliability of generated content

Currently, concerns remain regarding the reliability and precision of the answers generated by ChatGPT, which stands as a significant obstacle to its widespread adoption in education. Specifically, the responses related to certain topics or events might be erroneous, untrustworthy, or outdated. Should ChatGPT produce inaccurate content, it could disrupt students' learning processes and compromise the quality and dependability of their educational experience, ultimately undermining the trust essential for effective teaching and learning [3].

2.2. Failing to effectively protect users' privacy and information security

To offer personalized learning support to users, System ChatGPT must gather and analyze extensive user information and data. Nonetheless, during this process, it will inevitably encounter user privacy details. Within a networked environment, any misuse or leakage of personal and learning-related information could pose significant risks to individual safety. Additionally, while System ChatGPT excels at addressing basic problems and tasks, its research capabilities are constrained by the broad spectrum of disciplines and concepts involved. Consequently, for questions requiring in-depth reasoning, analysis, and judgment, System ChatGPT might struggle to provide precise and comprehensive answers, potentially limiting its utility in higher education [4].

2.3. It is easy to cause academic moral hazard

As artificial intelligence technology continues to advance, an increasing number of students are utilizing it to create content and presenting it as their own original work. Even ChatGPT can bypass common plagiarism detection tools by generating seemingly unique information, which is a serious challenge for academic integrity and efficiency, as well as academic performance assessment. If universities allow students to use ChatGPT to generate a variety of content, their evaluation will lack fairness and objectivity, and teachers will not be able to accurately evaluate students' performance, which will also increase the difficulty of teaching supervision [5].

3. The application path of ChatGPT in the field of higher education

3.1. Take the initiative to innovate educational concepts and consolidate students' dominant position

The deep fusion of artificial intelligence and education has emerged as an unavoidable trend. As new educational paradigms like "Internet, artificial intelligence + education" continue to evolve, universities must remain committed to their core mission while fostering continuous innovation and embracing the transformations driven by artificial intelligence. Primarily, higher education institutions should proactively align with the dynamics of technological advancement, revamp conventional teaching methods, and facilitate the evolution of educational philosophies. At present, the deep integration of ChatGPT and higher education is the trend of the era. Higher education should not only adapt to the new model of intelligent teaching as soon as possible, but also integrate the cultivation of students' digital skills into the talent training program. In addition, at the curriculum level, institutions of higher learning need skills in technology programming, artificial intelligence, data analysis, etc., so that students can better master and use the new information learning tools [6]. At the same time, institutions of higher learning should pay attention to the implementation of science and technology ethics education, actively cultivate students' moral norms and ethical consciousness, and ensure that they can use ChatGPT correctly [7].

Secondly, in the information technology environment, institutions of higher learning are faced with the crisis of students' subjectivity being obscured, and it is urgent to reposition "human." No matter how many times artificial intelligence has been updated and iterated, and what kind of transformation has been carried out on the future education form, it is impossible to fundamentally change the educational nature of education, nor will it shake the status of students in higher education. ChatGPT and other new intelligent products occupy an absolute advantage in knowledge reserves, which undoubtedly sounds the alarm for the educational mode of rote memorization under the exam-oriented education, but also confirms the irreplaceability of students in the aspects of initiative, creativity, and critical thinking. Therefore, in order to reduce the dependence and abuse risk of students on ChatGPT and other artificial intelligence from the root, educators need to pay more attention to the cultivation of students' personality and initiative, and pay attention to the cultivation of students' higher-order thinking [8].

3.2. Attach great importance to ethical issues and address the risk of educational alienation

First, in order to cope with the crisis of academic trust, institutions of higher learning and the government should jointly develop norms and ethical guidelines for the use of ChatGPT, and clarify the specific principles for its use; Companies should develop software to automatically identify and monitor ChatGPT content generation. Teachers should strengthen integrity education, strengthen academic self-discipline, and guide students to use ChatGPT to generate content in a reasonable, legal, and compliant manner. In addition, in the teaching process, teachers should also change the evaluation method of students from "knowledge" to "ability development".

Secondly, in the face of the danger of educational alienation caused by ChatGPT, higher education must always adhere to the people-oriented, deeply understand the technology, respect the law of education, and promote ChatGPT to serve the all-round development of students, get rid of the reality of being suppressed by technology, and enter the alternative future [9]. In particular, institutions of higher learning should not only fully understand and affirm the various development possibilities brought by ChatGPT, but also recognize the limitations and differences of ChatGPT, and emphasize the ultimate care for students. In this way, students can consciously resist the crisis caused by technological differentiation while pursuing sustainable development. At

the same time, whether teachers will be replaced by ChatGPT is also an urgent problem to be solved. ChatGPT can carry out course design, assignment evaluation, and language translation, but it does not mean that teachers can be replaced by artificial intelligence, and teachers are their intention based on education love.

In the future, teachers should have the ability to train students together with ChatGPT, and put more time and energy on learning knowledge and abilities that AI technology cannot, such as values, higher-order thinking, imagination, and aesthetic ability. In the selection of teaching content, teachers should not only focus on guiding students to establish correct values, but also focus on cultivating their thinking abilities, such as critical thinking and innovative thinking, programming thinking and modular thinking, so as to comprehensively improve the effectiveness of higher education and escort the sustainable development of students [10].

3.3. Reshape students' view of learning and generate a sense of lifelong learning

At present, ChatGPT has the characteristics of generalization, transfer, text generation, interaction, etc., creating favorable conditions for realizing large-scale personalized and lifelong learning. Among them, ChatGPT can make personalized recommendations according to students' search preferences to meet the personalized learning needs of different students. In addition, ChatGPT is also a 24-hour online "teacher," that is, it can act as an assistant for online tutoring, providing students with online questions and homework correction in real time, so that teachers and students can better communicate and interact. In addition, ChatGPT can also dynamically monitor and evaluate the learning process of students, and give them instant evaluation and feedback, so that they have a correct understanding of their own learning status and areas to improve [11]. However, it is worth noting that ChatGPT is only a means of personalized learning for students, which does not mean that ChatGPT can implement the concept of individualized teaching. The key is to look at the input of students, that is, the input questions, which require them to have strong problem awareness and critical thinking ability. In this way, we can distinguish the truth from the large amount of information. In addition, ChatGPT, as an open educational resource, will empower the lifelong learning system and become the external driving force for the construction of the lifelong learning system in the digital age. In the future, the higher education system needs to further stimulate students' awareness of independent learning and reshape students' view of learning [12].

3.4. Strengthen the digital literacy of teachers and students to achieve the goal of coordinated development

First, teachers should establish the concept that the value of rationality is supreme. In the teaching process, teachers should always bear in mind that the fundamental purpose of education is to promote the all-round development of students and avoid the alienation of technology caused by ChatGPT's arrogance. Second, generate scientific and technological application ideas. In regular education, teachers should know clearly when to use ChatGPT and avoid over-reliance on ChatGPT. Third, institutions of higher learning should improve the digital literacy of teachers to ensure that they have a deep understanding of ChatGPT and can use ChatGPT proficiently to carry out various educational activities, to better serve classroom teaching. Fourthly, teachers should establish the concept of "lifelong learning". In today's rapidly updated knowledge, especially the advent of intelligent tools such as ChatGPT, has brought serious challenges to teachers' work and development. In order not to be eliminated by The Times, teachers need to constantly strengthen their learning ability [13].

Next, students /should strengthen the cultivation of self-learning ability. In the context of the current era, if students want to survive in the era of artificial intelligence, they need to continuously improve their self-learning ability. Second, strengthen their own management. When using information tools such as ChatGPT, students

have problems with weak self-control and easy to be addicted to intelligent tools such as ChatGPT. Therefore, in order not to become an accessory to intelligent tools such as ChatGPT, students should continue to strengthen self-management.

3.5. Strengthen the governance of cyberspace and build a good network environment

With the wide application of ChatGPT in the field of higher education, cyberspace governance has become an important issue that cannot be ignored. In order to ensure the effective application of ChatGPT in higher education, we must strengthen the governance of cyberspace and build a safe, healthy and orderly network environment. First of all, the government and relevant institutions should issue relevant policies and regulations to clarify the norms and standards for the use of ChatGPT in the field of higher education. This includes regulating the authenticity and accuracy of the content generated by ChatGPT to prevent the spread of false information; At the same time, the scope and mode of use of ChatGPT should be stipulated to ensure that it does not infringe on users' privacy and information security [14].

Second, colleges and universities should strengthen cybersecurity education for teachers and students. Through regular cybersecurity training and lectures, teachers and students should improve their cybersecurity awareness and prevention ability. At the same time, institutions of higher learning should also establish a sound network security management system to regulate and constrain the online behaviors of teachers and students to prevent network security problems caused by the improper use of ChatGPT. In addition, in order to build a good network environment, we also need to strengthen technological research and development and innovation. We should develop more advanced cybersecurity technologies and tools to enhance our defense and response capabilities in cyberspace. At the same time, the research and development of intelligent tools such as ChatGPT should also be strengthened, and their innovative application and development in the field of education should be continuously promoted. Finally, we also need to strengthen international cooperation and exchanges. We should share experience and practices in cyber security governance with the international community to promote the formation of a global cyber security governance system [15].

4. Summary

To sum up, the application of ChatGPT not only brings development opportunities in higher education but also brings certain challenges. Therefore, higher education should take a correct look at ChatGPT, and strengthen students' dominant position by actively innovating educational concepts. Attach great importance to ethical issues to eliminate the risk of educational alienation; Reshape students' view of learning and generate the awareness of lifelong learning; Strengthen the digital literacy of teachers and students to achieve the goal of coordinated development; Strengthen the governance of cyberspace, build a good network environment and other paths, rationally apply ChatGPT, and give full play to the educational advantages of ChatGPT, to promote the digital major of higher education, continuously improve the quality of higher education, and provide valuable support and help for students and teachers, to cultivate them into the new talents of the era that the society needs.

Funding

Disclosure statement

The author declares no conflict of interest.

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