Exploring the Future Development and Practice of Education under the Development of Artificial Intelligence

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Abstract. Empowering education with artificial intelligence has become an inevitable trend, but the development of artificial intelligence brings new opportunities for teaching reform, but also hides many hidden dangers. On the one hand, people hope to achieve a deep integration of artificial intelligence and teaching, and on the other hand, real classroom teaching has a cold response to artificial intelligence. To promote the correct use of artificial intelligence, educators must clarify the limitations of its application in teaching, as well as the shortcomings of mental understanding, principle based knowledge, and generative teaching. In the practical process of empowering education with artificial intelligence, it is necessary to always grasp the development trend of artificial intelligence and deepen the exploration of the application of comprehensive empowering education with artificial intelligence.

Keywords: Artificial Intelligence; Future Education; Practical exploration; Educational development

1 Introduction

Artificial intelligence is a strategic technology that leads a new round of technological revolution and industrial transformation, and is having a profound impact on people's lives and the world. The fact shows that artificial intelligence will continue to develop and improve, and will become an important component of our daily lives[1].The rapid development of information technology has built a powerful digital engine for the realization of Chinese path to modernization. The emergence of metaverse, big data, cloud computing, virtual reality, AlphaGo, OpenAI, chatGPT, etc. has sparked a new wave of smart education and educational modernization. In 2018, the Ministry of Education issued the "Education Informatization 2.0 Action Plan", which clearly identified "intelligence" as one of the five major directions for the construction of education informatization. In 2019, UNESCO released "Challenges and Opportunities for Sustainable Development of Artificial Intelligence Institutes in Education"[2], which reached a consensus on the challenges, risks, and response measures of education in

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the process of informatization. In 2023, the Central Committee of the Communist Party of China and the State Council issued the "Overall Layout Plan for the Construction of Digital China", which stated that "the construction of Digital China will follow the overall framework of 2522 and enter the forefront of digital development in the world by 2035.". With the emergence of the technology wave, we are already in the midst of "digital survival", facing "singularity proximity". People enjoy the dividends of technology "shielding" while worrying about the backlash of technology "forcing". Faced with artificial intelligence, educators should not fall into technological inferiority, technological supremacy, or technological panic. Instead, they should capture the opportunities of the technology era with a calm mindset and cautious vision, face the potential risks of technology, clarify the boundaries of its application, and explore the path of its proper use.

2 The Dilemma of Teaching Under Artificial Intelligence

2.1 New Forms of Teaching Brought by Artificial Intelligence

The rapidly developing artificial intelligence has shown remarkable intelligence in data analysis, decision optimization, collaborative management, trend prediction, and other aspects. It can serve as both content and environment, as well as resources and means to provide possibilities for the transformation of traditional classroom teaching into online teaching, mobile teaching, blended learning, cross temporal and spatial teaching, ubiquitous teaching, and holistic teaching. As shown in Table 1 below, AI promotes the transition from a static closed state to an interactive open ecosystem by updating media and tools in the knowledge teaching environment.

Table 1. New AI technology create a new ecology of teaching environment

new AI technology		⇨	virtual immersive spaces
smart whiteboards	connected tablets		smart classrooms
digital textbooks	wearable devices		future schools

2.2 The Shelving of Artificial Intelligence in Teaching

Due to the professional arrogance, technical inferiority, or technical ignorance of educators, they exhibit an instinctive resistance or intentional indifference towards information technology, placing AI outside or superficially attached to knowledge teaching, which affects its normal functioning.

AI is classified as a "forbidden zone" for teaching tools. Faced with the rapid trend of "AI+teaching", some teachers still hold a negative attitude of ignoring technology, and some schools take mandatory resistance measures to prevent students from cheating. Compared to the "ban" that is like hiding one's ears and stealing a bell, the focus of educators is on how to achieve twice the result with half the effort.

2.3 The Realistic Response of Artificial Intelligence Applied in Teaching

The emergence of AI has shown educators a new turning point in teaching. Faced with the mentality of technology dependence and technology supremacy, educators attempt to fully incorporate AI into teaching, but have not expected that once technology violates its applicable boundaries, it will also have a negative impact on teaching.

The teaching reality of "cold response". Numerous researchers have pointed out that education is the slowest response to artificial intelligence among all fields. Artificial intelligence has had a broad and profound impact on other fields, but its impact on education is minimal. Firstly, the influence of artificial intelligence on teaching methods is minimal, with teachers lecturing and students memorizing, memorizing, and doing still being the main teaching methods. The most commonly used aspect of artificial intelligence in teaching is multimedia production and courseware playback. Secondly, the update speed of teaching content is slow. "Human efforts have made significant progress. Although trigonometric functions and calculus have been incorporated into the curriculum, more modern disciplines such as robotics and entrepreneurship have not yet been integrated into the current overcrowded system."

3 The Application Limitations of Teaching Under Artificial Intelligence

3.1 Faced with Loopholes and Loopholes in Spiritual Understanding and Artistic Creations

Don ihde once expected technology to provide a "bridge" between humans and the world [3], but Dreyfus, H., from an existentialist perspective, revealed that artificial intelligence lacks the necessary condition for human intelligence - "self-awareness" in the "living" state.

The innate deficiency of AI in understanding the mind. In the view of philosopher Searle (J.R.), "consciousness is the core fact of human existence," and "program is not the mind, nor can it constitute the mind[4]". Although his "Chinese Character House" thought experiment has been controversial, some researchers have shown through counterevidence that "computer programs do not possess the unique grammatical comprehension ability of the human mind". From the perspective of the eternal needs of AI invention, "due to its lack of fragile and vibrant bodies, it is difficult to develop a sense of fear and worry", so it does not need to create new tools to change the environment for survival. Therefore, it can only respond to directive commands in a normative manner, but it is difficult to understand interest intentions, life values, and moral choices. These problems are fundamental problems in education.

The logical paradox of AI in artistic creation. From a genetic perspective, artistic creation and technological synthesis exhibit a reverse trend: the latter imitates and fits existing experiences, while the former seeks to negate and differentiate experiences beyond borrowing. The programming algorithms of AI intelligence are retrospective, while artistic creation is creative. The solutions provided by ChatGPT can only meet

the basic standards of "qualification", but it is difficult to create outstanding artworks because these artworks require creators to invest personal truth and existence experience. The so-called "artworks" formed by AI are ultimately imitative and reproducible, and can only be called "products", but it is difficult to call them "art".

3.2 Faced with the Helplessness of Emotional Teaching and Practical Teaching

Emotional teaching emphasizes the spiritual care of teachers. It is the intentionality of emotions that leads humans to empathize with others and empathize with themselves, and this is precisely the difference between humans and machines. Although AI can simulate human neurons, it is difficult to obtain the pain and comfort of physical perception, the sense of moral dilemma and shame, and thus unable to empathize with the real experiences and living conditions of others. "The body is an intertwined reality of Logos and Eros, while material technology is only the embodiment of Logos. " AI, due to the lack of emotional expression from Eros, is unable to infiltrate the soul.

Practical teaching emphasizes the authenticity and openness of teaching situations, the embodiment and generation of teacher demonstrations. No matter what kind of reality enhancement technology artificial intelligence adopts, it cannot replace real reality. In this sense, artificial intelligence teaching is just an alternative to teaching in real situations. Technology can support learning, but it cannot replace well-trained human teachers. Human teachers shoulder the important mission of guiding students to develop comprehensively as individuals and members of society[5].

4 Exploration of Education Practice Under Artificial Intelligence

4.1 Grasp the Development Trend of Artificial Intelligence

"The technology and capabilities of artificial intelligence have undergone significant changes and will continue to develop and improve. In the future, the role of artificial intelligence in higher education will far exceed that of the past[6]."In recent years, generative artificial intelligence represented by ChatGPT has made significant breakthroughs, and artificial intelligence has become a technological high ground for competition among countries around the world. University College London collaborates with cross departmental AI experts to offer offline courses on "Generative Artificial Intelligence and Academic Skills[7]." According to the McKinsey Global Research Institute's forecast, by 2030, 30% of working hours in various industries in the United States may be automated, with generative artificial intelligence technology contributing at least 8%[8]. Looking back at the development process of artificial intelligence, it can usually be divided into three stages.

4.2 Path Selection for Comprehensive Empowerment of Education Through Artificial Intelligence

Artificial intelligence empowers education, especially in terms of science, education, learning, management, and evaluation, which has a profound impact.

Firstly, in terms of scientific research, digital technology iteratively generates knowledge to expand disciplinary boundaries, and accelerates disciplinary research through applications such as data acquisition and experimental simulation. Secondly, in terms of teacher teaching, artificial intelligence analysis can help teachers adjust their teaching methods in a timely manner, focus on problem-solving in practical situations, and highlight the cultivation of students' research creativity and problem-solving abilities. Thirdly, in terms of student learning, building interactive learning scenarios based on digital intelligence technology enhances the subjectivity and interactivity of graduate students, promoting their research creativity and problem-solving abilities. Fourthly, in terms of educational evaluation, digital profiling driven by big data focuses on the dynamic process of student development and improvement incentives. By analyzing student behavior processes, cognitive skills, and academic performance, data analysis and guidance are provided for the individual learning, growth, and career development of students[9].

4.3 New Applications of Artificial Intelligence Empowering Future Education

In the future, artificial intelligence will empower future education in six major projects. One is the digital engineering of enrollment and employment. Empowering students through artificial intelligence throughout the entire process of enrollment, education, and employment from the "entrance" to the "exit". The second is the discipline big data knowledge engineering construction project. Fragmented knowledge can be mined from multiple sources of big data, integrated into a knowledge base/graph, and major/key research and development projects for disciplinary big data knowledge engineering can be established. The third is professional knowledge graph engineering. By establishing a knowledge graph of disciplines and majors, as well as applying new digital courses in textbooks, the entire learning process can be recorded, and big data can be analyzed and evaluated. The fourth is the construction project of digital textbooks. Supported by abundant resources and in-depth operational experience, combined with precise data analysis, we assist students in inquiry based learning[10]. Tools such as Smart Sparrow and Thinkster Math are also constantly improving their technology to provide a more personalized learning experience[11].

5 Conclusion

Artificial intelligence empowering education ultimately means using AI as a means to comprehensively promote educational development and promote the construction of an educational powerhouse. Its vision is to empower the learning and development of students in the digital age. Overall, there are several aspects:

One is to adhere to the all-round development of morality, intelligence, physique, aesthetics and labor, and avoid the materialization of technology.

The second is to implement the empowering role of artificial intelligence while preventing technology from surpassing education. Empowering education with artificial intelligence requires maintaining the inherent laws and basic attributes of education, while innovating and seeking change in methods, means, and content.

Thirdly, teachers should teach students how to think and create, and not just focus on imparting and acquiring knowledge. What artificial intelligence cannot replace is to cultivate students' ability to think and create value and pursue humanistic sentiments.

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