



The practical dilemma and countermeasures of AI empowering precision teaching in college physical education classrooms

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Abstract: As the crystallization of the integrated development of the new generation of cognitive science and educational technology, AI technology has played a revolutionary role in promoting the reform and innovation of educational practice. With the development of information technology, the traditional physical education teaching can no longer meet the existing teaching needs in higher education. However, the advantages of technology in promoting precise and efficient physical education teaching are becoming increasingly prominent, with the application value of precise physical education teaching goals, personalized physical education teaching content, data-driven physical education teaching process, and scientific physical education evaluation. This article discusses the application of AI technology in physical education teaching, in order to achieve the goal of creating efficient physical education classrooms.

Key words: AI; college physical education; teaching; countermeasures

1 Introduction

Under the background of rapid progress in science and technology, China has entered a new era of artificial intelligence, 5G and Internet+. The major breakthroughs in information technology have not only had a profound impact on our daily life and work style, but also provided a solid technical support for the scientific and sustainable development of education. In 2019, the Central Committee of the Communist Party of China and the State Council jointly issued the *China Education Modernization 2035*, pointing out that we should accelerate the education reform in the information age according to the digital development trend of the era, apply digital information technology to create an integrated intelligent education, teaching and management service platform, and build an intelligent campus in the new era. Modern digital information technology can be used to improve talent training mode, meet the the integration and development of modern education scale and personalized education, a new type of artificial intelligence education service auxiliary supervision system can be established, and digital education resources sharing mechanism of artificial intelligence education platform can be built to promote the development of education teaching quality, make the formation of modern intelligent education management and monitoring system, promote the modernization of precision management and scientific decision-making in education, meanwhile strengthening the integration of artificial intelligence and education teaching is the inevitable trend of future education development [1]. How to apply artificial intelligence technology to improve the precise teaching in physical education classrooms in colleges and universities, and promote efficient and in-

depth teaching between teachers and students, is becoming the growth point of intelligent teaching in the future.

2 The application value of AI technology in college physical education teaching

2.1 Promoting the personalization and precision of physical education in colleges and universities

Nowadays, people are no strangers to the application of big data, cloud computing and other modern information technology in various fields, and smart sports is to use its advanced information technology to realize the comprehensive collection of information on students' physique, sports habits, interests and preferences, as well as the analysis and integration of the collected data. Through big data, colleges and universities can set up physical exercise plans and teaching programs that meet the needs of students according to the situation of different students, so that physical education can more accurately meet the needs of students and improve the teaching effect. It also helps to stimulate students' interest in learning, enhance their participation and motivation.

2.2 Promoting the liberalization of physical education

In recent years, a series of new teaching tools supported by artificial intelligence technology, such as virtual platforms, VR glasses, and Vice trackers, have been gradually developed and used. With the help of these teaching tools, physical education is greatly reduced by time and space constraints, and the degree of educational freedom is continuously improved. In terms of time, artificial intelligence can integrate all kinds of physical education resources and manage them systematically in stages and groups. Teachers can upload teaching activity resources to the network in advance, and students can access teaching resources through the network to complete independent learning. At the same time, content such as event appreciation and project history, which are difficult to take into account in traditional offline physical education, can also be displayed through online resources. In terms of spatial dimension, the application of artificial intelligence technology has shortened the physical distance between teachers and students. Especially in the event of inclement weather, physical education activities for teachers and students can be carried out online through mobile devices such as computers and mobile phones. Virtual reality technology can even simulate the corresponding scenes and characters, so that students can get an immersive experience.

3 The practical dilemma faced by intelligent physical education in colleges and universities in China

3.1 The integration of intelligent teaching methods is not deep enough

"Intelligent Leading Education Informatization 2.0" promotes the deep integration of big data and physical education, which is of great significance to the high-quality development of intelligent physical education. Nowadays, the needs of students for physical education are more diverse, which requires physical education teachers to be more flexible and diverse. However, at present, some schools do not pay attention to the main body of students in physical education, and the cultivation of students' independent innovation ability and practical activity ability is insufficient. Although AI and other technologies have long been used in physical education, they still lack the breadth and depth of application. AI is becoming increasingly popular as a form of physical education. Some PE teachers believe that even simple teaching content and traditional teaching methods can cultivate high-level students, and are reluctant to integrate AI into PE teaching. The lack of in-depth integration of intelligent teaching affects the development of intelligent sports AI [2].

3.2 The concept of intelligent physical education is relatively lacking in schools

The educational concept is the rational understanding and subjective requirement of "education should be necessary" formed by the educational subject in the educational practice and educational thinking activities, and the establishment of correct educational concept is the basic condition for carrying out physical education work scientifically. Digital technologies such as artificial intelligence and 5G are promoting the high-quality development of sports undertakings, and

the application of intelligent technology to sports fields in colleges and universities will help stimulate innovation and improve efficiency. However, compared with the manufacturing, finance, medical care and other industries, the adaptation and synchronization of the education system to the intelligent development obviously lag behind. Due to the lack of clear understanding of the connotation, characteristics, value, role positioning, and basic issues of intelligent sports education, traditional sports education often fail to form correct intelligent education concepts, leading to significant challenges in integrating artificial intelligence technology into sports education, and the construction of intelligent sports education models and reshaping the sports education ecosystem face many practical difficulties. In terms of the cultivation of intelligent education concepts, schools at all levels and of all kinds lack policy guidance and institutional guarantee to break down the thinking barriers and inherent modes, and have no effective modes and methods for physical education teachers to refer to.

3.3 Relevant support and guarantee systems need to be developed and improved

The premise of artificial intelligence is to have a large amount of effective movement data. At present, whether in the field of school sports, or in the field of competitive sports and mass sports, there is no unified data standard and specification in data collection, transmission, analysis, application and many other links, and there is almost no public disclosure to the community. Each sports data service provider has its own data collection and analysis system, and there is no system platform for data exchange and sharing. At present, many scattered data islands have been formed. Due to the large number of development subjects, it is difficult to coordinate the distribution of benefits, data rights and other issues, and the development of data exchange and sharing platform is so slow that so far, China has not built a real sports database. In addition, the lack of standardized data restricts the process of artificial intelligence to empower physical education teaching, and hinders the benign growth of physical education artificial intelligence.

4 Path analysis of promoting the construction of intelligent physical education in colleges and universities

4.1 Teaching paradigm of multi-dimensional intelligent physical education

Intelligent physical education teaching classroom is not only the inheritance and repetition of knowledge, but also more likely to realize the five-in-one teaching paradigm of research teaching paradigm, heuristic teaching paradigm, empirical teaching paradigm, interactive teaching paradigm, and open teaching paradigm. In addition, AI technology can assign sports teaching, which can scientifically select easy to operate and good digital technologies based on sports training objectives, content, characteristics, and student training needs to serve physical education classroom teaching. It solves problems such as single form of physical education teaching, low efficiency, weak performance, untimely control of exercise intensity, and lack of subjective experience in evaluation, thereby stimulating students' learning enthusiasm, interest, cultivating students' sports skills, improving the quality of physical education teaching, and promoting the integrated development of physical education and health courses. Virtual reality (VR) and augmented reality (AR) technologies immerse the experiencers in a multi-source information fusion, interactive multi-dimensional dynamic vision and body behavior, thus transforming the traditional textbook-led teaching model. For example, in physical education teaching, teachers can use AI technology to build virtual stadiums to create a physical training environment that combines virtual and real sports. The construction of virtual venues can not only avoid many restrictions on physical education due to weather, insufficient facilities and other reasons, but also allow sports projects limited by environment, climate, geography and other factors to come to students and meet the needs of students' skill training. In addition, the application of smart wearable devices can also enhance students' experience of participating in sports training, for example in ski teaching, students can wear smart devices and teachers can guide students to carry out simulation training, experience the real scene

and technical points of ice and snow sports, which will play a role in improving students' skills, improving the effectiveness and safety of training, not only saving resources, but also reducing the safety risks in project training [3].

4.2 Innovating the education concept for physical education teachers

First, we must correctly understand the intrinsic value of physical education teaching and AI technology. Sports and health courses are the mainstay of physical education in colleges and universities, and high-quality physical education teaching plays an important role in cultivating students' athletic ability and their good habits, exercising healthy physique, and shaping strong character. In fact, the integration of AI technology will make traditional physical education teaching more convenient, scientific and efficient, and teachers should use AI technology to optimize the physical education teaching process in a timely and appropriate manner and improve the effectiveness of physical education teaching. Second, physical education teachers need to continuously learn AI theory and practice in the process of physical education teaching, so as to promote the combination and promotion of theory and practice. In the process of theoretical learning, physical education teachers need to deepen the exploration of the intrinsic value of AI, and pay attention to the latest progress of AI development, laying a foundation for the practical application of AI in physical education teaching. At the same time, physical education teachers also need to continuously apply the learned AI theoretical knowledge to physical education teaching, actively use AI technology to solve practical problems in physical education, and timely verify and feedback the learned theories through practical application in physical education teaching.

4.3 Strengthening the policy support for AI-enabled physical education teaching

At present, the AI-enabled physical education in Chinese schools is still in its infancy, which needs strong guidance and support from policies, so as to standardize the relatively chaotic low-level application in the early stage of the industry development, and lead the overall development of school sports artificial intelligence. Government departments should formulate practical and feasible supporting policies and strictly implement them. AI enterprises with development potential should be supported to establish AI sports experiment bases, and basic and applied research should be encouraged and supported to create a development platform for AI-enabled school sports.

5 Conclusion

The vigorous development of physical education in colleges and universities is not the result of overnight success, but the enduring efforts. AI-enabled physical education is a good opportunity to realize the transformation and upgrading of physical education. It can not only improve the teaching quality and efficiency, but also promote the healthy development of students' body and mind. Through the reform of AI intelligent physical education teaching, we can better realize the goal and mission of physical education, and lay a solid foundation for the development and progress of physical education in the future. However, in the application of artificial intelligence technology, it is also necessary to seriously solve the challenges and problems it faces to ensure the maximization and optimization of its application effect.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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