Analysis on the Path and Value of AI Empowering College Physical Education

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Abstract: Against the background of digital transformation, the deep integration of artificial intelligence and education has become an important trend in educational reform. This paper focuses on the empowering role of AI in college physical education. It first explains the application connotation of artificial intelligence in the field of education, then analyzes its core value from three aspects: improving teaching efficiency, promoting students' all-round development, and advancing educational innovation, and finally puts forward implementation paths including building intelligent platforms, innovating teaching modes, and strengthening teaching staff construction. This study can provide theoretical reference and practical guidance for college physical education to break through traditional restrictions and achieve intelligent upgrading, so as to promote the high-quality development of modern physical education.

Keywords: Artificial intelligence; College physical education; Empowerment path; Teaching innovation; All-round development

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Introduction

With the rapid development of science and technology, artificial intelligence has penetrated into various fields of education, bringing new impetus to the reform of college physical education. Traditional physical education is characterized by standardization, low efficiency and lack of personalization, which can hardly meet the development needs of students in the new era. Against this background, exploring the integration path of AI and college physical education is of great practical significance. Based on the advantages of AI technology and the actual situation of college physical education, this paper systematically analyzes its application value and implementation strategies, making a beneficial exploration to solve teaching dilemmas and establish a new intelligent teaching ecology.

1.Application Connotation of Artificial Intelligence in Education

The application of artificial intelligence in education is an upgrade of traditional educational scenarios. Its core is to eliminate information asymmetry in the educational process, accurately capture behavioral data of teaching and learning, so as to realize the optimal allocation of teaching resources, dynamic adjustment of the teaching process, and scientific evaluation of teaching effects. Technology is no longer a simple auxiliary tool. By simulating human cognitive processes, it provides personalized support for learners and establishes an efficient teaching management mode for educators, promoting the transformation of education from "standardized supply" to "personalized adaptation" and forming a more open, flexible and intelligent new form of modern education.

2.Value of AI Empowering College Physical Education

2.1 Improving the Efficiency of Physical Education

The improvement of physical education efficiency comes from the precise empowerment of artificial intelligence technology in all teaching links. Intelligent devices can collect students' sports data in real time, such as movement standardization, physical energy consumption, and skill mastery progress. Visual reports can be generated quickly without manual recording and analysis one by one, allowing teachers to directly understand each student's learning status[1]. Based on these data, teaching content can be adjusted in time according to students' actual conditions, avoiding the situation that "excellent students are not satisfied and underachievers cannot keep up" in unified teaching. Meanwhile, tools such as intelligent reservation systems and online Q&A platforms reduce time consumption in teaching organization, enabling teachers and students to devote more energy to skill training and

interactive guidance, making the teaching process more targeted and efficient.

2.2 Promoting Students' All-Round Development

Artificial intelligence technology provides diversified support for the comprehensive improvement of students' physical literacy. Intelligent sports monitoring devices can feed back deviations in movement posture in real time, helping students independently correct wrong movements and develop standardized exercise habits. In addition, the system can customize personalized training programs according to students' physical fitness and interests, balancing the improvement of sports skills and physical quality and avoiding the dullness caused by single training. Furthermore, through digital progress records, students can clearly see their own growth trajectory, enhance sports confidence and initiative, promote the internalization of sports spirit, and realize the coordinated development of physical quality, sports ability and psychological quality.

2.3 Advancing Innovation in Physical Education

Artificial intelligence injects new vitality into college physical education and breaks the constraints of traditional teaching modes. In terms of teaching content, virtual reality technology can be used to build simulated sports scenarios, allowing students to learn complex sports skills in an immersive experience, expanding the scope and depth of physical education. In terms of teaching forms, the integrated online and offline teaching mode is realized, enabling students to access teaching resources and participate in interactive training conveniently at any time through intelligent platforms, breaking the constraints of time and space. Moreover, big data analysis provides sufficient empirical support for physical education research, helping educators accurately grasp teaching laws and students' growth characteristics, supply scientific basis for teaching reform, and promote the transformation of physical education from experience-oriented to scientific and innovative.

3.Implementation Path of AI Empowering College Physical Education

3.1 Building an Intelligent Platform to Consolidate the Teaching Foundation

The integration of technology and teaching scenarios relies on a full-featured intelligent platform for solid support. The platform should realize a full-chain closed loop of data collection, analysis and processing, resource integration and interactive feedback, break information barriers between software and hardware, and ensure the smooth coordination of different terminals and modules through standardized interfaces and compatible designs, laying a stable technical foundation for personalized teaching and precise evaluation, so that technology can effectively serve the core needs of teaching[2].

The intelligent physical education management platform should integrate multi-dimensional software and hardware resources. On the hardware side, wearable monitoring devices, motion capture systems and intelligent physical fitness testers are introduced to fully collect students' sports status. On the software side, a management system integrating teaching resources, personalized program generation, teacher-student interaction and performance accounting is developed. In ball games courses, students wear intelligent devices to transmit sports data in real time. Teachers understand the overall class and individual differences through the background, push targeted correction content and training plans combined with movement deviation feedback, and the platform automatically records the whole process of data to form learning files, providing scientific basis for assessment and teaching adjustment.

3.2 Innovating Teaching Modes to Optimize the Teaching Process

Reconstructing the teaching process based on the core advantages of AI technology is a key path to improving teaching quality. This student-centered mode realizes dynamic optimization of all teaching links through data-driven means, breaking the traditional "one-size-fits-all" approach, integrating pre-class, in-class and after-class stages organically, and giving full play to the initiative of teachers and students. Its core is to use technology to accurately obtain dynamic data of teaching and learning, adjust strategies according to feedback, and achieve precise adaptation of teaching and learning.

AI empowerment can form a complete teaching closed loop: before class, students complete physical fitness tests and interest surveys through the intelligent platform, the system generates learning portraits combined with historical data, and teachers formulate differentiated preview tasks and push basic movement videos or tactical analysis materials as needed; in class, the intelligent motion capture system feeds back technical data in real time, teachers carry out targeted group guidance and one-on-one error correction, and AR technology is used to improve students' practical ability; after class, the platform pushes personalized review tasks, after students upload completed videos, the system automatically scores and marks improvement points, and teachers provide online Q&A, forming an efficient closed loop.

3.3 Strengthening Teaching Staff Construction to Improve Teaching Ability

As the leader of teaching activities, teachers' AI application literacy directly determines the implementation effect of technological empowerment. Promoting teachers' transformation from "traditional skill imparters" to "intelligent teaching guides" requires systematic training and practical exploration. In this process, teachers should master the methods and skills of deep integration of AI technology and physical education, and acquire comprehensive abilities such as data interpretation, intelligent tool application and personalized teaching design, so as to manage intelligent teaching scenarios[3]. More importantly, it is necessary to cultivate teachers' thinking mode of using technology to solve practical teaching problems.

Colleges and universities can establish an integrated training mode of "hierarchical training + practical research + exchange and sharing". Specifically, according to teachers' different technological foundations, three-level special training covering equipment operation, data analysis and program design is offered; "AI + physical education" practical workshops are organized, where teaching teams design intelligent schemes in groups and conduct classroom trials, such as developing personalized training modules with motion sensors; an on-campus exchange platform is built, and regular case sharing meetings are held to promote the popularization of high-quality methods. After systematic training, most teachers can skillfully use intelligent platforms and independently design personalized teaching schemes, and some cases can be selected into excellent case databases at all levels.

4.Conclusion

AI empowering college physical education is an inevitable trend of educational modernization. It provides key technical support for teaching reform and effectively solves many problems in traditional teaching. Implementation paths such as building intelligent platforms, innovating teaching modes and strengthening teaching staff construction lay a solid foundation for improving teaching quality and educational effectiveness. In the future, we should continue to deepen the integration of technology and teaching, optimize empowerment paths, give full play to the educational value of AI, promote the transformation of college physical education towards scientificalization and personalization, and cultivate more high-quality talents with physical and mental health.

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