RESEARCH ARTICLE

Research on the Reform and Development of Physical Education Teaching in Colleges and Universities Based on Information Technology

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Abstracts: The widespread usage of information technology in today's world demonstrates its numerous practical benefits. The enhancement of higher education teaching standards, the development of athletic talent, and the overall growth of students are all factors in the reform and development of physical education instruction in colleges and universities. To achieve the innovation of teaching methods and the long-term development of college physical education teaching, the reform of college physical education teaching based on information technology must incorporate information technology into all elements of college physical education teaching. The article begins by outlining the impact of information technology on the reform of physical education instruction in colleges. It then provides strategies for utilizing information technology to improve and develop physical education instruction in colleges and breathe new life into it.

Keywords: information technology; college physical education teaching; reform; development

Introduction

The teaching of physical education in colleges and universities, as a crucial component of higher education, has long been crucial in developing students' overall growth. As information technology advances quickly, the advent of the digital era brings with it brand-new opportunities and problems for the development and reform of college physical education teaching. College physical education instruction is gradually evolving due to the widespread use of digital technology, including the Internet, virtual reality, augmented reality, motion sensors, etc. College physical education instructors must adapt their lesson plans, acknowledge the value of information technology in the reform of college physical education instruction, and effectively utilise technology to advance the calibre of instruction.

1. Information technology's effect on changing how physical education is taught in colleges and universities

1.1 Help to improve the learning experience and teaching effect

Information technology is crucial to the reform of college physical education instruction, particularly in terms of improving the student experience and having a big impact on learning. The traditional collegiate physical education curriculum frequently has time and space limitations. It can be challenging to fully meet each student's demands due to the lack of sports facilities and time for physical activity and study, but with the aid of information technology, the educational experience can be significantly enhanced. Since they are no longer restricted to traditional textbooks and classrooms, students can now access a vast array of sports learning resources, instructional videos, live game broadcasts, and other content via the internet and mobile devices. These independent learning opportunities allow students to flexibly arrange their learning time according to their needs,

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which increases the effectiveness and depth of learning. (Weng & Fang , 2022). At the same time the introduction of virtual reality technology, augmented reality technology, etc., so that sports teaching can be a more vivid, intuitive display of sports movements and skills, to help students better understand and master sports knowledge, through the online teaching platform and interactive learning tools, students can participate in online discussions, interactive questions and answers, to promote exchanges and cooperation between students and teachers, and to cultivate students' teamwork ability. With the help of information technology, IT can also support students' personalized learning. Teachers can customize learning plans and exercise programs for each student according to the student's learning progress and level, and can also identify students' learning difficulties and progress promptly and provide targeted guidance and support through learning data analysis and intelligent assessment systems.

1.2 Helps the expansion and sharing of teaching resources

Another important impact of information technology in the reform of sports teaching in colleges and universities is to promote the expansion and sharing of teaching resources, The previous sports teaching in colleges and universities was often limited by teachers' personal experience and limited teaching materials, resulting in relatively single and limited teaching content, in the context of information technology application, the teaching resources have been greatly enriched and expanded, and at the same time, realize the sharing and openness, to bring the sports teaching in colleges and universities aA new opportunity for the development of sports teaching in colleges and universities. Teachers in college physical education can digitally upload lesson plans, PowerPoint presentations, instructional films, and other high-quality teaching materials to the online teaching platform. Students no longer have to be confined to the classroom and classroom, and they can independently choose the time and place of study, which increases the convenience and effectiveness of learning. Students

can access and learn at any time and anywhere thanks to digital and networked teaching resources (Li & Wang , 2021). Through the network and the Internet platform, teachers from different colleges and universities and different regions can conveniently share their teaching resources and experiences. Teachers can contribute their excellent teaching materials to the creation of a teaching resource base, as well as access the excellent teaching resources of other teachers, learn from one another, and enhance their own and the classroom's quality and level of instruction. This kind of resource sharing and exchange goes beyond simply enhancing the teaching's subject matter. It also promotes the cooperation and communication between universities (Wang , 2020).

1.3 Helps to innovate the teaching mode and assessment method

Traditional sports instruction in colleges and universities is frequently based on knowledge transfer and straightforward practical training, lacking personalized and diversified teaching methods. With the aid of information technology, the teaching mode can be upgraded comprehensively, and teaching assessment is also more effective. The application of virtual reality technology (VR), augmented reality technology (AR) and other technologies make sports teaching a more vivid, intuitive display of sports action and skills, through these advanced technical means, students can participate in the simulation of sports training and competition scenes in an immersive manner, thus improving the learning effect and learning interest. At the same time, the development of information technology has brought more means of data collection and analysis, and teachers can record and analyze students' sports performance in detail through video analysis, motion sensors, and other technologies so that the quantitative assessment can more objectively understand the students' sports level, progress, and shortcomings, help teachers to target the development of teaching plans and personalized counseling, and promote the innovation of the assessment method (Yan, 2020). What's more, the

innovation of the teaching mode can provide more diversified data sources for the assessment mode, and the assessment results can also provide feedback and a basis for the optimization of the teaching mode, and the interactive integration of this teaching mode and assessment mode makes the teaching process more flexible and dynamic, and the teachers can adjust the teaching strategy in time according to the assessment results to further improve the teaching effect.

2. The reform and development of sports teaching in colleges and universities in the application of information technology strategies

2.1 Application of information technology to build online teaching platform

The development of an information technology-based online teaching platform is a crucial application strategy in the reform of sports instruction in colleges and universities because it may offer a practical, adaptable, and effective teaching and learning environment for instructors and students. First of all, teachers can digitally integrate college sports teaching resources, including teaching videos, courseware, teaching materials, learning materials, etc., to ensure the diversity and richness of teaching resources, so that teachers and students can access the required teaching content anytime and anywhere. Then teachers can create courses on the online teaching platform, set course objectives, contents, teaching plans, and teaching resources, release course information through the platform, and students can conveniently check the course schedule and related learning materials. Various interactive learning tools can also be integrated into the online teaching platform, such as discussion forums, online Q&A, and real-time interactive teaching, etc. These tools promote communication and cooperation among students and stimulate students' interest and participation in learning. Through the online teaching platform, teachers can assign homework, quizzes, and exams, and students can submit homework and answer questions online, which are automatically corrected and graded by the platform, providing instant feedback and grade inquiries, and making it convenient for students to understand their learning progress and performance. The online teaching platform can record students' learning behavior and progress, and teachers can carry out personalized tutoring and guidance based on students' learning data. Using the data analysis function, teachers can find students' learning difficulties and take timely measures to help. Through the construction of an information technology online teaching platform, college sports teaching can realize the organic combination of online and offline teaching, and improve the efficiency and quality of teaching, the use of the platform can also stimulate the students' learning enthusiasm and active participation, to cultivate outstanding sports talents to provide better support and protection, it should be noted that in the process of using the online teaching platform to do a good job in the protection of data security and student privacy, to take appropriate measures to protect the teaching information. Take appropriate steps to safeguard the privacy and security of teaching materials and to prevent their improper or unauthorized usage (Li , 2020).

2.2 Innovative Teaching Methods Using Information Technology

By utilizing information technology, we can stray from the conventional teaching paradigm and explore more engaging, interactive, and individualized teaching strategies to increase student engagement and learning outcomes. Utilizing virtual reality and augmented reality technologies for teaching sports is a creative teaching strategy. While AR technology, on the other hand, can combine virtual content with real-life scenarios so that students can get real-time guidance and feedback, VR technology allows students to immerse themselves in virtual sports competitions and training scenarios to simulate actual sports scenes and situations.Another innovative teaching method is the use of data analysis and intelligent technology for personalized teaching. Through motion sensors and other technologies, teachers can monitor students' performance and posture in real-time. Combined with data analysis technology, teachers can quantitatively assess students' athletic level and

progress, understand students' learning characteristics and needs, and based on students' differences, teachers can develop personalized training plans and tutoring programs to help students improve their athletic skills in a targeted manner. In addition, information technology can also support teachers in carrying out blended teaching combining online and offline. Teachers can release pre-testing materials, teaching videos, and online exercises on the online teaching platform so that students can get ready before class. In the classroom, teachers can use interactive teaching, group discussion, games, and other forms of activities to enhance students' participation and learning effect. Combining offline and online teaching methods can enhance teaching effectiveness and better suit the needs of students.

2.3 Strengthen teacher training and promote teachers' professional development

College physical education instructors should focus on improving their information technology skills in order to ensure that their classroom management strategies can keep up with the advancement of college physical education instruction. To enhance the professional level of teachers and promote their faster and better development, colleges and universities should establish a special teacher training program, including the basic knowledge and practical skills of information technology application, which covers the use of teaching platforms, the development and application of multimedia teaching resources, and the use of virtual reality technology and augmented reality technology. Teachers who take part in the program will gain an understanding of the situations and techniques for implementing information technology in the teaching of physical education, enabling them to more effectively incorporate it into their classroom practices (Xie, 2013). Meanwhile, to enhance teachers' IT application ability, universities can offer IT-related professional development courses or seminars, and teachers can choose to participate in different levels of professional development activities according to their own needs and interests, so that they can learn and master the

advanced application skills of information technology in physical education teaching in-depth, and these courses and seminars can also promote the communication and cooperation among teachers, and share teaching experience and best practices. To enhance teachers' motivation, schools can set up teaching innovation awards to encourage teachers to try out new ways of applying IT in PE teaching. Through practice and innovation, teachers can not only enhance their ability in IT application but also gain a deeper understanding of the actual effects of teaching reforms and provide valuable experience and suggestions for the improvement of physical education teaching in colleges and universities. In addition, to improve teachers' enthusiasm, schools can set up teaching innovation rewards to encourage teachers to try new IT application methods in physical education teaching (Chen & Deng, 2023). Teachers can gain a deeper understanding of the real impact of teaching reform and gain valuable experience that they can use to improve the delivery of physical education in colleges and universities. These skills can be developed through practice and innovation.

2.4 Integration of teaching content with information technology in course design

The integration of teaching content with information technology in curriculum design can enhance the interactivity, interestingness, and practicability of teaching, and improve students' learning enthusiasm and active participation. In the teaching process, teachers can use information technology to develop multimedia teaching resources, such as teaching videos, interactive courseware, virtual experiments, etc. Through multimedia teaching, sports movements, skills, and tactics can be vividly demonstrated to help students better understand and master the knowledge, and the teaching videos can record the actual operation process of the sports for students to watch and imitate repeatedly; interactive courseware can be set up to set interactive exercises and interactive courseware can set up interactive exercises and games to stimulate students' learning interest and

enthusiasm. In college sports teaching, teachers can also motion sensors and data analysis technology can real-time monitoring of students' sports movements and performance, the use of motion sensors, you can accurately measure the students' movement posture and technical details, quantitative assessment of students' sports skills, combined with the data analysis technology, teachers can formulate a personalized training plan based on the students' sports data and improve the teaching methods. With the aid of information technology, the teaching material is made more varied and vivid, and the learning experience is richer and more interactive. This integration can effectively improve the quality and effectiveness of physical education teaching in colleges and universities and cultivate athletes with a broader range of literacy (Zhang, 2023).

Summarize

To summarize, the information technology application strategy in the reform of college sports teaching plays an important role in promoting, and information technology not only helps to enhance the learning experience and teaching effect, expand and share teaching resources, but also promotes the innovation of teaching mode and assessment method. Physical education instruction in colleges and universities realizes the natural blending of online and offline teaching through the use of information technology to create an online teaching platform. This improves the effectiveness and quality of instruction while also providing an opportunity to advance the professional standing of teachers, enabling them to better adapt to the new era of teaching. These strategies not only lay a solid foundation for the modernization and development of sports teaching in colleges and universities, and cultivate better sports talents, but also provide valuable experience for future education reform.

Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

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