

Application of Information Technology in Physical Education Teaching in High Schools

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Abstract: With the rapid development of information technology, its application in the field of education is becoming more and more widespread, in high school physical education, the introduction of information technology not only enriches the teaching methods, but also improves the quality of teaching, deeply stimulates the students' interest in learning, and lays a solid foundation for students' subsequent high school physical education learning. This paper explores the application of information technology in high school physical education teaching, aiming to provide reference for the reform of high school physical education teaching.

Keywords: information technology, high school, physical education, application

Introduction

Traditional high school physical education teaching often focuses on the teacher's demonstration and students' imitation, the teaching method is single and difficult to meet the individual needs of different students, while the integration of information technology has brought about a new change in physical education teaching. Emerging teaching technology not only changes the traditional teaching mode, but also promotes the scientific and modernization of physical education teaching, and lays a solid foundation for students' comprehensive development and learning.

1. Current status of information technology application in high school physical education teaching

1.1 Multimedia teaching

Multimedia teaching is one of the most widely used forms of information technology in high school physical education teaching. Through PPT, video, animation and other multimedia means, teachers can intuitively show the technical details of sports movements to help students better understand and master. For example, when teaching basketball shooting skills, teachers can play the shooting video of professional players and combine it with slow-motion replay to guide students to carefully observe each step of the shooting, thus improving the learning effect.

1.2 Web platform

Web platforms provide a wealth of online resources and learning opportunities for senior secondary PE teaching. Teachers can release teaching videos, courseware, exercises and other teaching resources through school or third-party platforms for students' pre-study before class and review after class. At the same time, students can also communicate and interact with teachers and classmates through the platform, share learning experiences and questions, form a good learning atmosphere, and strengthen the positive impact of information technology in high school physical education teaching^[1].

1.3 Intelligent wearable devices

Intelligent wearable devices such as heart rate monitors and sports bracelets have been gradually applied to the actual teaching process, which can monitor students' sports data in real time and provide scientific feedback for sports teaching. Teachers can use these data to understand the students' sports status, fitness level, etc., so as to formulate personalized teaching plans, and students can also use the equipment to understand their own sports performance, and inspire self-challenge and progress motivation.

2. Teaching strategies of information technology in high school physical education

2.1 Improvement of teaching efficiency and implementation of teaching tasks

Information technology means to make sports teaching more intuitive, vivid, and help students quickly understand and master the action essentials, at the same time, the application of multimedia and network platform also saves teachers' time and energy, improves teaching efficiency, mobilizes students' learning enthusiasm, and points out the direction for their own comprehensive development^[2]. For example, in high school physical education, basketball dribbling skills is a basic and important teaching content, the traditional teaching method often relies on the teacher's on-site demonstration and students' repeated practice, but this way there are problems such as low efficiency and untimely feedback. In order to improve the efficiency of teaching, the high school physical education teachers decided to introduce information technology means, using multimedia teaching and network platform to assist the teaching of basketball dribbling skills. Firstly, the teacher made the PPT courseware and video tutorials of basketball dribbling skills in advance. The courseware contains key information such as the basic posture of dribbling, the key points of controlling the ball with the fingers, the changes of different dribbling speeds, etc. The video tutorial shows the dribbling demonstration and slow-motion replay of professional players. Teachers uploaded the courseware and video tutorials to the school's online platform for students to study before class, and posted the pre-study tasks on the platform and asked students to watch the videos and try to imitate the dribbling movements in order to advance the classroom teaching activities. In the classroom, the teacher first briefly introduces the importance of basketball dribbling skills and learning points, and then uses multimedia equipment to play PPT courseware and video tutorials. Through the slow-motion replay and close-up shots in the video, students can clearly see the details of finger movements, wrist flips and body coordination when dribbling. In the process of demonstration, the teacher can explain with the content of the video, stressing the key points and easy mistakes of dribbling, and at the same time invite several students to give live demonstrations and record their dribbling movements with mobile phones or video cameras. In the process of playing the recorded video of students' dribbling, the teacher can focus on identifying the common problems of movement among students and explain them, and personally demonstrate for students to strengthen their understanding and memory of dribbling movements. Students can continue to watch the video tutorials and courseware for review and consolidation through the online platform after class. At the same time, teachers can post relevant exercises or challenges on the platform to encourage students to carry out self-testing and practice. In this process, teachers can also use the online platform to collect students' feedback and understand the problems and difficulties they encounter in the learning process, so as to adjust the teaching plan and methods in a timely manner and improve the overall teaching efficiency. Teachers through the introduction of information technology means for the teaching of basketball dribbling skills, physical education teaching efficiency has been improved, in the application of multimedia and network platforms, making the teaching content more intuitive and vivid, which helps students quickly understand and master the action essentials, and the teacher does not need to spend a lot of time in the classroom for demonstration and explanation, thus saving time and energy, and improving the efficiency of teaching. Moreover, the setting of video tutorials and pre-study tasks stimulates students' interest and initiative in learning, prompting them to participate more actively in the learning process, and timely adjustment of their own movement deficiencies, laying a solid foundation for the development of their overall ability.

2.2 Stimulating students' interests in learning and enhancing their experience

Information technology has brought novel and diverse teaching methods for physical education, which can attract students' attention and stimulate their interest in learning. Teachers can make use of the game-based teaching methods in the actual teaching activities to encourage students to learn physical education knowledge in a relaxing and pleasant atmosphere, and to improve the overall teaching effect^[3]. For example, in high school physical education, running is a basic and necessary sports, but often because of the boring and tiring situation, it is difficult to stimulate students' interest in learning. In order to change this situation, a high school physical education teacher decided to use information technology to stimulate students' interest in running by using a variety of games to motivate students to learn running skills and enjoy the fun of sports in a relaxed and pleasant atmosphere. First, the teacher designed a running game called "Campus Treasure Hunt" using virtual reality or augmented reality technology. In the game, students need to run around the campus according to a designated route, and at the same time search for "treasures", i.e. virtual objects or quest points, hidden in various corners. The game has different difficulty levels and reward mechanisms to encourage students to challenge themselves and strive for higher scores and rewards. In the classroom, the teacher first introduces the rules and gameplay of "Campus Treasure Hunt" to the students, and shows the game interface and operation methods. At the same time, the teacher emphasizes running skills and precautions to ensure that students can run correctly and safely during the game. Students play the game in groups, and each group elects a captain to lead the players to complete the task. During the game, the teacher can provide real-time guidance and encouragement according to the students' performance to help them overcome difficulties and challenges. At the end of the game, the teacher counts the scores and completions of each group and awards prizes and certificates to recognize outstanding students and teams. At the same time, the teacher guides students to share their experiences and gains from the game to promote communication and learning among each other.

2.3 Promoting personalized teaching

The application of technologies such as smart wearable devices allows teachers to develop personalized teaching plans based on individual differences in students to meet the needs of students at different levels. This way of teaching students according to their abilities helps to improve their learning effect and self-confidence. In high school physical education, long jump is a highly technical sport that requires individualized instruction. Due to the differences in students' physical conditions, athletic fundamentals and learning abilities, it is often difficult for traditional uniform teaching methods to meet the needs of all students. In order to solve this problem, a junior high school physical education teacher decided to introduce smart wearable device technology, which collects and analyses students' exercise data to develop a personalized long jump teaching plan to promote students' individual development. Firstly, the teacher equipped each student with smart wearable devices such as smart bracelets or motion sensors, which can monitor students' heart rate, stride frequency, jumping height and other sports data in real time, and the teacher needed to instruct students to wear the devices correctly and explain the use of the devices and the precautions to be taken before the long jump teaching. Secondly, in the process of long jump teaching, students wear smart wearable devices to practice, the corresponding equipment automatically collects students' sports data and real-time transmission to the teacher's computer or mobile phone applications, teachers use data analysis software to process and analyse students' sports data to understand each student's physical condition, sports performance and problems, combined with the results of the data analysis, the teacher develops a personalized long jump teaching plan for each student. With the results of data analysis, the teacher makes a personalized long jump teaching plan for each student, which covers targeted training content, intensity, frequency and precautions, etc., so as to promote the comprehensive ability of students to be improved.

3. Conclusion

To sum up, the application of information technology in high school physical education teaching has significant advantages and potentials, and with the application of multimedia teaching, network platforms and smart wearable devices, it can not only improve the efficiency and quality of teaching, but also stimulate students' interest and initiative in learning.

Therefore, high school physical education teachers should actively embrace information technology and continuously explore and innovate teaching methods and means to promote the modernization and scientific development of physical education teaching.

Conflicts of interest

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

References

[1] Li Chen. Innovative Application of Information Technology in Rural Sports Teaching--Taking Short Video as a Perspective[J]. Cultural and Sports Goods and Technology. 2024; (11): 131-134.

[2] Yang Xi. Practical exploration of information technology-enabled high school sports specialized teaching[J]. Modern Teaching. 2024; (09): 24-25.

[3] Wang Weijian. The integration of information technology and high school physical education indoor classroom[J]. China Journal of Multimedia and Network Teaching (Lower Decade). 2024; (02): 147-149.