

Discussion on the Strategies of Higher Vocational Basketball Teaching from a Digital Perspective

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ABSTRACT

With the advent of the digital era, the application of information technology in the field of education has become increasingly widespread. As an important course for cultivating students' physical fitness and sports skills, higher vocational basketball teaching also needs to keep up with the pace of the times and use digital means to improve teaching quality. This article deeply explores the effective strategies of higher vocational basketball teaching from a digital perspective, analyzes the application advantages of digital technology in basketball teaching, including enriching teaching resources, improving teaching effectiveness, and meeting personalized learning needs. Combined with actual teaching, specific implementation strategies are proposed, such as using multimedia teaching, developing online courses, and optimizing teaching through data analysis. The aim is to provide useful references for the reform of higher vocational basketball teaching and promote the comprehensive improvement of students' basketball skills and comprehensive qualities.

KEYWORDS

Digitalization; Higher Vocational Basketball Teaching; Strategies

1 Introduction

Higher vocational education aims to cultivate high-quality technical and skilled talents with practical abilities and professional qualities. As an important part of higher vocational physical education courses, basketball teaching not only helps students build up their bodies but also cultivates their teamwork spirit, competitive awareness, and willpower. In the digital era, advanced technologies such as big data, artificial intelligence, and multimedia have brought new opportunities and challenges to higher vocational basketball teaching. How to make full use of digital technology, innovate the teaching model, optimize the teaching process, and improve the quality of basketball teaching has become an urgent problem to be solved by higher vocational physical education workers. By discussing the strategies of higher vocational basketball teaching from a digital perspective, it can provide scientific guidance for teaching practice and promote the modern development of higher vocational basketball teaching.

2 Application Advantages of Digital Technology in Higher Vocational Basketball Teaching

2.1 Enriching Teaching Resources

The traditional teaching resources of higher vocational basketball are relatively limited, mainly relying on textbooks, teachers' demonstrations, and a small number of teaching videos. However, the application of digital technology has greatly enriched the teaching resources. There is a vast amount of basketball teaching materials on the Internet, including professional basketball game videos, wonderful skill displays of star players, and different styles of basketball training courses. Teachers can screen and integrate these resources according to teaching objectives and students' actual situations to provide students with diversified learning materials. For example, when explaining basketball tactics, teachers can play classic tactical clips from high-level competitions such as the NBA, allowing students to intuitively feel the application and changes of tactics and deepen their understanding of tactical concepts. At the same time, some professional basketball teaching software also provides rich resources such as animation demonstrations and simulated training scenarios, further expanding the presentation forms of teaching content.

2.2 Improving Teaching Effectiveness

Digital technology can present abstract basketball knowledge and complex technical movements to students in a more intuitive and vivid way. Through multimedia teaching means such as videos, animations, and 3D simulations, students can clearly see the decomposition, continuous process of basketball technical movements, and the coordination of various parts of the body. For example, when teaching basketball shooting skills, the use of animation demonstrations can accurately show key links such as the shooting angle, the order of force application, and the finger flicking of the ball, making it easier for students to master the correct shooting method. In addition, digital technology can also achieve real-time feedback and evaluation of the teaching process. With the help of technologies such as motion sensors and smart

wearable devices, teachers can monitor students' sports data in real-time, such as motion trajectories, speeds, and forces, and adjust teaching strategies in a timely manner according to these data, giving students targeted guidance, thus effectively improving teaching effectiveness.

2.3 Meeting Personalized Learning Needs

Each student has differences in physical fitness, sports foundation, and learning ability. The traditional unified teaching mode is difficult to meet students' personalized learning needs. Digital technology provides a possibility to solve this problem. Online learning platforms and intelligent teaching systems can analyze students' learning situations and characteristics according to students' learning records and test results, and customize personalized learning plans and learning paths for students. Students can independently choose learning contents and learning methods according to their own progress and needs and carry out targeted learning and training. For example, students with a weaker foundation can repeatedly watch teaching videos of basic knowledge and basic skills and carry out intensive exercises; while students with a better foundation can choose more challenging advanced skills and tactical courses to expand their abilities. This personalized learning mode can fully stimulate students' learning enthusiasm and initiative and improve learning effectiveness.

3 Strategies of Higher Vocational Basketball Teaching from a Digital Perspective

3.1 Using Multimedia Teaching

3.1.1 Making High-quality Teaching Courseware

Teachers should make full use of multimedia software such as PowerPoint and Flash to make vivid basketball teaching courseware. The content of the courseware should cover basketball theoretical knowledge, technical movement explanations, tactical analysis, etc. In the production process, attention should be paid to the reasonable collocation of various elements such as text, pictures, audio, and video to enhance the attractiveness and expressiveness of the courseware.

For example, when explaining basketball rules, some video clips of fouls in actual competitions can be inserted, accompanied by text descriptions and rule interpretations, so that students can more intuitively understand the meanings and applications of the rules.

3.1.2 Carrying out Video Teaching

Video teaching is an important form of multimedia teaching. Teachers can collect and organize various types of basketball teaching videos, including training videos of professional athletes, basketball skill teaching videos, and basketball game analysis videos, and arrange them reasonably according to the teaching content and students' learning progress. In classroom teaching, play relevant videos in a timely manner, and guide students to watch, analyze, and discuss. For example, when teaching basketball dribbling skills, play some dribbling skill display videos of famous basketball players, let students observe their dribbling postures, rhythms, and changing directions, and then organize students to carry out imitation exercises and group discussions, sharing their learning experiences and insights. In addition, teachers can also record some teaching videos by themselves, focusing on explaining and demonstrating the problems that students are prone to encounter in the learning process, which is convenient for students to review and consolidate after class.

3.2 Developing Online Courses

3.2.1 Building an Online Learning Platform

Schools should actively invest resources to build a fully functional online learning platform for higher vocational basketball. The platform should have basic functions such as course display, video playback, online testing, assignment submission, and interactive communication. Teachers upload basketball teaching course resources to the platform, and students can log in to the platform through terminal devices such as computers and mobile phones to study anytime and anywhere.

In terms of course settings, it should include basic basketball courses, advanced courses, special training courses, and expansion courses such as basketball culture to meet the learning needs of students at different levels. At the same time, the platform should also set up a learning progress tracking and evaluation function to record and analyze students' learning situations in real-time, providing a basis for teachers to adjust teaching strategies.

3.2.2 Organizing Online and Offline Blended Teaching

Organically combine online courses with traditional classroom teaching and carry out online and offline blended teaching. Before class, teachers release preview tasks through the online learning platform, allowing students to watch relevant teaching videos, read electronic textbooks, etc., and understand the basic framework and key and difficult points of the course content. In class, teachers centrally explain and answer the questions that students encounter during the preview process, and organize students to carry out practical operations and group discussions to strengthen students' mastery of knowledge and skills. After class, students complete assignments, conduct self-tests, and expand their learning through the online platform, and teachers give feedback and evaluation on students' assignments and test results in a timely manner. Through this online and offline blended teaching mode, the flexibility of online learning and the interactivity advantage of offline teaching can be fully utilized to improve teaching quality.

3.3 Optimizing Teaching through Data Analysis

3.3.1 Collecting Students' Sports Data

With the help of technical means such as motion sensors, smart bracelets, and basketball training auxiliary devices, collect students' sports data during basketball teaching and training. These data include students' exercise time, exercise intensity, heart rate changes, motion trajectories, shooting percentages, dribbling error times, etc. Through the long-term accumulation and analysis of these data, teachers can comprehensively understand students' physical fitness, sports abilities, and learning progress. For example, by analyzing students' heart rate data, teachers can judge whether the exercise intensity of students in classroom teaching is appropriate and whether the exercise effect has been achieved; by analyzing shooting percentage data, teachers can find out the problems existing in students' shooting techniques and provide a basis for targeted teaching guidance.

3.3.2 Adjusting Teaching Strategies Based on Data Analysis

According to the collected students' sports data, teachers use data analysis software and tools for in-depth analysis to excavate the students' learning characteristics and laws reflected behind the data. Then, adjust teaching objectives, teaching contents, and teaching methods in a timely manner according to the analysis results. For example, if the data analysis shows that most students have relatively big problems in basketball passing techniques, teachers can increase the special training time for passing skills in subsequent teaching, adjust teaching methods, and adopt more diversified practice methods, such as passing games, group passing cooperation exercises, etc., to help students improve their passing abilities. At the same time, teachers can also formulate personalized teaching plans and training programs for each student according to their individual differences to achieve precise teaching.

3.4 Cultivating Students' Digital Learning Abilities

3.4.1 Carrying out Digital Learning Training

In order to enable students to better adapt to basketball learning in a digital environment, schools and teachers should carry out relevant digital learning training. The training content includes basic computer operation skills, the use methods of online learning platforms, the acquisition and utilization of multimedia teaching resources, and the application of online learning tools. Through training, students can master the basic methods and skills of digital learning and improve their ability to use digital technology for autonomous learning. For example, organize students to participate in special training courses on the use of online learning platforms, let students be familiar with the interface layout, functional modules, and operation processes of the platform, and learn how to search for course resources, watch teaching videos, submit assignments, and participate in discussions on the platform.

3.4.2 Guiding Students' Autonomous Learning and Cooperative Learning

In the digital teaching process, teachers should pay attention to guiding students to carry out autonomous learning and cooperative learning. Teachers can provide students with some learning tasks and learning resources, and let students, on the basis of autonomous learning, communicate and cooperate with classmates through the online learning platform or offline group discussions to jointly solve the problems encountered in learning. For example, when learning basketball tactics, teachers can assign a group assignment, requiring students to collect relevant materials through the online learning platform in groups, analyze the characteristics and application scenarios of a certain basketball tactic, and make a PPT for presentation and explanation. In this process, students can not only improve their autonomous learning ability but also cultivate their teamwork spirit and communication ability.

3.5 Enriching Teaching Content with Digital Resources

3.5.1 Introducing Professional Basketball Teaching Videos

In teaching, teachers can introduce resources such as official NBA teaching videos and training courses of well-known basketball coaches. These videos cover various basketball skills, such as the decomposition of Stephen Curry's three-point shooting skills and the detailed explanation of LeBron James' breakthrough dribbling movements, allowing students to intuitively learn the technical movements of top players. Taking Curry's three-point shooting teaching video as an example, the video shows in detail his entire process from the preparation posture, dribbling adjustment to the shooting action, including the transfer of body center of gravity, the extension angle of the arm, and the subtle movements of finger flicking the ball. Students can learn the essence of three-point shooting by watching it repeatedly.

3.5.2 Using 3D Animation to Demonstrate Tactical Cooperation

Use 3D animation software to make basketball tactical demonstration animations, such as common passing and cutting cooperation, screening cooperation, etc. Through the animation, it can show the players' running positions, passing opportunities, etc. from different perspectives, helping students better understand the tactical principles. For example, in the 3D animation explaining the passing and cutting cooperation, the animation can clearly present that a player holds the ball to attract the defense, then passes the ball to the cutting teammate, and how the cutting teammate chooses the offensive method after receiving the ball and other details, so that students have a deeper understanding of the tactics.

3.5.3 Sharing Basketball Knowledge Websites and APPs

Recommend basketball information websites and APPs such as "Hupu" and "Tencent Sports", which have rich basketball news, technical analysis, tactical interpretation, and other contents. Students can study independently in their spare time to broaden their basketball knowledge.

On the "Hupu" forum, students can participate in various basketball topic discussions, understand the views of different fans on basketball skills, tactics, and player performances, and obtain basketball knowledge from multiple angles.

3.6 Improving Teaching Effectiveness with Digital Tools

3.6.1 Using Sports Analysis Software

Use sports analysis software such as KineMaster to record and analyze students' basketball movements. The software can capture students' movement trajectories, speeds, forces, and other data, and teachers can provide targeted technical improvement suggestions for students based on this.

For example, by analyzing the movement trajectory of students' shooting, it is found that students have the problem of too low a shooting release point, and teachers can provide targeted guidance for students to carry out special training to improve the shooting release point.

3.6.2 Using Virtual Reality (VR) and Augmented Reality (AR) Technologies

Use VR devices to create virtual basketball training scenarios, such as simulating free throws, fast breaks, and other scenarios in the game, allowing students to improve their psychological qualities and coping abilities in an immersive environment.

AR technology can project virtual basketball coaches or training auxiliary lines into the real scene, and students can get real-time guidance and feedback. In the VR simulated free throw scenario, students seem to be in a real game scene, with the shouts of the audience around. Through repeated training in this highly simulated environment, students' free throw psychological qualities can be effectively improved.

3.6.3 Adopting Smart Basketball Training Equipment

Introduce smart basketballs, smart backboards, and other equipment. Smart basketballs can record the number of shots, shooting percentages, ball speeds, and other data, and smart backboards can automatically rebound the basketball, improving training efficiency and also stimulating students' training interest. When students use smart basketballs for training, they can immediately understand their own shooting data, such as the change of shooting percentage within a certain period of time, so as to adjust the training method accordingly.

3.7 Building a Digital Platform to Promote Teacher-Student Interaction

3.7.1 Establishing an Online Teaching Platform

Use online teaching platforms such as Chaoxing Learning Pass and Tencent Classroom. Teachers upload basketball teaching materials, such as teaching plans, courseware, videos, etc. Students can watch teaching videos, submit assignments, and participate in discussions on the platform, and teachers give feedback and guidance in a timely manner. On the Chaoxing Learning Pass platform, teachers can create discussion topics, such as "How to Improve Basketball Defense Awareness". Students can express their views and experiences on the platform, and teachers can comment and summarize to promote communication between teachers and students.

3.7.2 Using Social Media for Communication

Establish basketball teaching groups through social media such as WeChat and QQ. Students can ask teachers questions at any time, share their basketball training experiences and game videos. Teachers can also release training tasks, notices, and other information in the group to strengthen communication with students. In the WeChat teaching group, students can share the wonderful performance videos of their extracurricular basketball games in the group, and discuss the technical application and tactical implementation in the game with teachers and classmates.

3.7.3 Carrying out Online Competitions and Activities

Hold online basketball knowledge competitions, shooting competitions, and other activities on the campus network or online platform. Students participate by answering questions online and uploading shooting videos, etc., which stimulates students' learning enthusiasm and creates a good basketball learning atmosphere. For example, hold an online basketball knowledge competition, set rich prizes, and students participate by answering questions online, which can not only test their own mastery of basketball knowledge but also improve their learning enthusiasm.

3.8 Conducting Teaching Evaluation Based on Digital Data

3.8.1 Collecting Students' Sports Data

Use wearable devices such as smart bracelets and sports watches to collect students' sports data during basketball teaching and training, such as heart rate, exercise steps, calorie consumption, etc., to understand students' exercise intensity and physical conditions. Through the data collected by smart bracelets, teachers can understand the change of students' exercise intensity in a basketball class and judge whether students have received sufficient exercise.

3.8.2 Analyzing Students' Learning Data

Record students' learning behavior data through the online teaching platform, such as video viewing duration, assignment completion situation, test scores, etc., and analyze students' learning progress and mastery degree to provide a basis for teaching evaluation. For example, by analyzing students' assignment completion situation on the online platform, teachers can find out which knowledge points students have not mastered solidly, so as to focus on explaining them in subsequent teaching.

3.8.3 Implementing Diversified Evaluation

Combine sports data, learning data, and teachers' classroom observations to conduct diversified evaluations of students. Not only pay attention to students' basketball technical levels but also attach importance to students' learning attitudes, progress amplitudes, etc., to make the evaluation more comprehensive and objective. For example, for a student with a poor basketball technical foundation but a positive learning attitude and obvious progress, teachers should give full affirmation in the evaluation and encourage him/her to continue to work hard.

4 Conclusion

Digital technology has brought many advantages to higher vocational basketball teaching and provided a powerful support for teaching reform and innovation. Through strategies such as using multimedia teaching, developing online courses, optimizing teaching through data analysis, and cultivating students' digital learning abilities, teaching resources can be enriched, teaching effectiveness can be improved, students' personalized learning needs can be met, and the overall quality of higher vocational basketball teaching can be promoted. However, in the application process of digital

technology, it is also necessary to pay attention to the reasonable use of technical means to avoid over-reliance on technology and ignoring the essence of teaching and the dominant position of students. At the same time, teachers should continuously improve their digital literacy and teaching abilities to better meet the requirements of higher vocational basketball teaching in the digital era. In the future, with the continuous development and improvement of digital technology, higher vocational basketball teaching will face more opportunities and challenges, and educators need to continuously explore and innovate to promote the development of higher vocational basketball teaching to a higher level.

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