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Innovation of Badminton Teaching Mode Using Information Technology Environment

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Abstract: *Information technology has enriched the teaching methods of higher education and has been widely applied. This paper adopts research methods of literature review and logical analysis to systematically analyze the many drawbacks of traditional teaching methods in badminton teaching in universities. Combined with the rapid development of information technology, it lists various advantages of video feedback teaching, MOOC teaching, WeChat teaching, "online+offline integration" teaching mode, and flipped classroom teaching, providing a theoretical basis for the innovation of badminton teaching mode. Research suggests that information technology has brought significant changes to badminton teaching, promoted innovation in badminton teaching methods, and promoted the development of badminton sports.*

Keywords: *information technology, badminton, teaching mode*

1. Introduction

At present, traditional teaching methods are still widely used in badminton teaching in Chinese universities, which are venue teaching. Teachers demonstrate and explain the movements of badminton one by one, and then students practice according to the teacher's teaching. Previous studies have shown that the proportion of using new teaching methods such as multimedia in badminton classrooms is less than 30% [1]. Nowadays, the development of technology in society is very rapid, and various industries are actively utilizing the convenience brought by information technology for reform. As an important means of auxiliary teaching, how to introduce information technology into teaching courses, facilitate teachers' teaching, and ultimately serve badminton teaching, is a question worth pondering in the badminton teaching system.

Traditional teaching methods have many drawbacks, such as the teacher's demonstration teaching, which many students forget when practicing on their own after reading it. Often, the teacher needs to repeatedly demonstrate, which undoubtedly increases the teaching burden of the teacher. By using the means of information technology, we can save the teacher's demonstration actions in the form of pictures or videos, and then upload it to the corresponding service equipment, so that students can watch it anytime and anywhere, regardless of the time and venue [2]. The traditional teaching method emphasizes the dominant position of teachers, thus neglecting the individuality and subjectivity of students. Teachers often teach the teaching content according to the teaching syllabus. Due to the limitations of course time, after explaining basic theoretical knowledge in the classroom, teachers greatly reduce the time for explaining actions, especially personalized exercises for students, the lack of targeted guidance from teachers to students results in low classroom learning efficiency. The construction of information technology courses has also brought important changes to badminton teaching, effectively impacting traditional physical education teaching, physical education teachers need to change their traditional teaching ideas and re-examine teaching methods and strategies based on the teaching objectives of physical education teaching.

2. The profound impact of information technology on badminton teaching

One is that compared to traditional teaching, multimedia assisted teaching is more flexible and can be made into action diagrams, videos, and even freeze and label actions without being limited by time and space. It can be accompanied by explanatory sounds, allowing students to learn demonstration actions intuitively, vividly, and comprehensively [3]. For more complex actions, they can be repeatedly observed and learned, ultimately, it promotes students to acquire correct and standardized actions.

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Secondly, the camera can also capture students' actions, allowing them to watch their own videos to identify problems and then correct them based on the correct videos. Compared to traditional teaching that only relies on teachers to discover errors, this correction highlights students' subjectivity and initiative. Thirdly, multimedia technology greatly reduces the teaching burden on teachers due to the fact that students often cannot grasp the essentials instantly while the teacher is demonstrating, it is necessary for the teacher to repeatedly demonstrate. The same action is often repeated many times, which invisibly increases the workload of the teacher teaching videos can vividly display movements from different perspectives, and when combined with teacher explanations, they can highlight key movements or key points. Information technology has innovated modern physical education teaching methods, it provides effective teaching technical support for teaching, it builds a professional and practical teaching platform, overcomes the limitations of traditional teaching mode, saves a lot of manpower and material resources, it solves many problems in badminton teaching, and promotes the teaching supervision system, teaching evaluation and so on to improve accordingly. It should be noted that badminton teaching from the perspective of information technology can't solely rely on multimedia technology, and traditional teaching methods cannot be completely replaced. Badminton teaching should adopt a combination of traditional teaching methods and modern technical means, which should complement each other and complement each other, only in this way can badminton teaching make significant progress [4].

3. Badminton teaching innovation in the information technology environment

3.1 Video-feedback teaching

The main mode of badminton technology teaching is teacher explanation, demonstration, students practice, teacher tour, guidance, students practice again, and so on, until students master the technology. However, due to the short demonstration time of badminton technique, which is just a moment, learners can only retain very little demonstration information in the brain even if they demonstrate in slow motion, which can only be imitative learning. The most important thing is that when teachers guide students' technical movements, the language completely describes the technically correct part and the part that needs to be corrected. The reference for students to understand the teacher's guidance is the fuzzy and less demonstration information retained in the brain [5]. Therefore, the comparison between the two is also vague and the learning effect is not so good. Now, smart phones are very popular, shooting, storage, play and other functions are very powerful. From the perspective of information technology, the teacher clearly points out the correct technology, the technology to be improved and the technology to be corrected by filming the process of students' technology practice with smart phones and letting students watch the technology video of their own practice. Research shows that with the help of micro-video teaching, teachers can present difficult badminton technical movements in front of students in a coherent way by slow playing or replay. Through the micro-video, students not only feel these technical movements emotionally, but then imitate these technical movements under the guidance of teachers, which further deepens the understanding and mastery of difficult technical movements in badminton and promotes the improvement of their own badminton skills.

3.2 MOOC teaching

MOOCs have been used in China for a long time, but there are still very few MOOC on sports. Offering badminton MOOC courses has the following advantages: First, the "Football Sport and Science" course offered by Tsinghua University has shown us the advantages of MOOC. This course has been launched on the online MOOC platform of Chinese schools, and the page views of each session have reached thousands[6]. Among them, the chapter of Sports and Health related to badminton has attracted more than 10,000 students. It shows that the characteristics of MOOC combined with the sports characteristics of badminton are very attractive. Second, due to the characteristics of badminton, it needs a relatively small court, which is convenient for the shooting of MOOC courses. In the case of bad weather, badminton can be held indoors to avoid the influence of weather. Thirdly, as a kind of fitness sport, badminton is deeply loved by the masses. Badminton needs a low foundation, simple and fast entry, and has a remarkable effect on physical exercise. Badminton not only has corresponding courses in primary school, middle school and high school, but also has corresponding elective courses in college courses. It also has a high popularity rate among middle-aged and elderly leisure and fitness groups. Fourth, the MOOC platform itself has a corresponding group of learners, mainly young people and college students, distributed in coastal cities and cities with relatively developed higher education.

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There are also many areas and people with good badminton atmosphere, which "coincide" with each other to a certain extent. Fifth, it is urgent for badminton to carry out teaching reform and project promotion, the current teaching cannot meet the needs of students of different levels and different foundations, badminton teaching video needs to be reformed with the improvement of badminton technology. In addition, the influence of badminton in the sports world is still not enough, and China, as a powerful country in badminton, is far from enough. MOOC platform is becoming increasingly international, and the promotion of badminton through such platform can let more people in the world know about badminton. Combining with the characteristics of badminton, badminton MOOC courses can design teaching modules, test and examination modules, certificate and assessment modules, online and offline interaction modules, etc. The teaching module is mainly for teaching badminton course resources. According to the badminton syllabus, MOOC producers need to split the knowledge points, compile the corresponding outbound lecture notes, and then make video recording with badminton teachers. The test and examination modules mainly include in-class exercises, online question-answering, mid-term and final examination papers and answers, etc., which should be prepared by relevant teachers in advance to facilitate MOOC staff to set up in the corresponding modules. Online and offline communication module mainly highlights the interaction, students and teachers have questions and answers here, teachers and students can communicate with each other in an instant and convenient way. The whole module is the core of the badminton MOOC.

3.3 WeChat teaching

WeChat mobile learning has a good auxiliary effect in badminton teaching, which is reflected in the following aspects: First, it can effectively improve learners' interest in learning and help students form a positive attitude towards exercise. Some interesting teaching resources can be put on the WeChat official account platform or WeChat group, where students can learn and communicate in real time, creating a positive learning atmosphere. In badminton teaching, theoretical knowledge plays an important role. According to the experiment, WeChat mobile learning plays a good role in promoting badminton teaching. The theoretical performance of learners has been greatly improved after the application of WeChat mobile learning. Theoretical basis to badminton action training and practice teaching provides a solid foundation. Third, it can improve students' learning efficiency. The basic course content of badminton teaching can be learned by WeChat, while the theoretical class hours of badminton are small. With the help of WeChat, the teaching content can be arranged more reasonably, the class hours can be arranged reasonably according to the detailed content, and students' fragmented time can be utilized reasonably, thus improving learning efficiency [7]. We suggest that relevant sports colleges and universities strengthen the curriculum design of WeChat mobile learning. WeChat courses are diversified and can incorporate pictures, text, videos, in addition to the knowledge points of the learning resources themselves, we should also pay attention to the needs and learning situations of learners. On this basis, it is also necessary to improve the traditional teaching evaluation mechanism. With the increasing proportion of WeChat teaching, the traditional teaching evaluation model can no longer adapt to the modern teaching form. How to make learners more interested in participating in the team of mobile learning is an important issue to be considered. In the assessment content, the interaction and participation of WeChat group or WeChat official account will be involved in the assessment. As an important part of teaching, teachers play an important role in WeChat mobile learning. Teachers should also improve the design level of teaching resources accordingly, and guide students to take WeChat mobile learning as a means to assist learning. Schools should provide good software and hardware environment for students and teachers, that is, improve the corresponding mobile learning terminal equipment and software, as well as the corresponding network environment suitable for mobile learning.

3.4 "Online + offline integration" teaching mode

In short, blended learning is a kind of learning mode combining traditional teaching and network teaching. Its main goal is to improve students' awareness of autonomous learning and thus improve teaching quality. Badminton mixed learning is a teaching method that combines the theoretical courses of college sports and badminton with computer-assisted online learning. It emphasizes student-centered, students' independent inquiry subjectivity and its role in meaning construction, the design of learning environment, the use of various information resources to support students' learning, and the use of diversified teaching evaluation methods [8]. This way can complement the advantages of traditional teaching and network teaching, focus on the integration of the theory and technology of college physical education, improve teaching efficiency and teaching quality. The theoretical knowledge of

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badminton is mainly divided into two aspects: sports and health, basic theory of badminton. The practice of badminton is divided into two parts: leisure sports, physical fitness and badminton technique. The theoretical part can be completely learned by online courses, the concepts and tactical terms involved in practice can also be learned through the Internet, and specific tactics can also be learned by watching videos, GIFs and other ways on the network platform [9]. At present, the mixed teaching mode applied in college sports is mainly the mixed learning of online and offline. Classroom evaluation and network evaluation can be combined. In the mixed learning mode, students can use the Internet, multimedia and other information technologies to integrate badminton knowledge and skills, integrate information technology into the sports learning system, and make it become a powerful tool to acquire knowledge, discover problems, explore problems and solve problems. The formation of an intuitive and effective teaching form and teaching media is conducive to the dissemination and acceptance of badminton knowledge, the integration of all resources conducive to teaching, and the production of rich. The teaching resources with pictures and pictures, sound and form can produce better effects than traditional teaching.

3.5 Flipped classroom teaching

Flipped classroom refers to the "reversal" of the teacher's explanation in class and the student's practice in badminton teaching. The teacher tells the students the learning content before class, so that the students can learn independently before class, namely "self-study", and interact and communicate with classmates in class. This innovative teaching mode truly reflects that students are the main body of learning. Students may study by themselves for a long time, but the content of learning is not "borrowed" for students[10]. Therefore, students have a deeper and more thorough understanding of knowledge, knowledge can be effectively converted into ability, and can cultivate students' active learning ability, which can be used for a lifetime. Compared with traditional classroom teaching, from the perspective of information technology, its biggest advantage is "learning before teaching", which is essentially the reversal of the process of "knowledge transfer" and "knowledge internalization" of traditional teaching, and also the reversal of the classroom "roles" of teachers and students, reflecting that students are the "leading role" and teachers are the "supporting role". Second, flipped classroom pushes rich digital materials such as pictures, electronic documents, voice, teaching videos, web pages and intelligent required courses; the classroom is one of the learning places, which is mainly reflected in the "shortening" of learning distance between teachers and students. Instantaneous exchange of learning information can also be realized between countries, and the means of communication is not only sound, but also popular and cheap video. Flipped classroom teaching mode can significantly improve the relatively simple badminton technical action teaching effect, this teaching innovation has a wide range of application prospects.

4. Conclusion

In the information technology environment, innovative teaching such as video feedback teaching, MOOC teaching, WeChat teaching, "online + offline integration" teaching mode, flipped classroom teaching and other badminton teaching have enhanced teachers' multimedia teaching ability, teaching innovation ability, communication ability between teachers and students and the ability to deal with emergencies in teaching. It strengthens the communication between students and students, teachers and students, it enhances the feelings between each other and the spirit of mutual help between students, it forms an excellent relationship between teachers and students. In addition, multimedia teaching improves students' interest in learning badminton, increases the number of after-class training, enhances students' physical fitness, and has a positive impact on students' thoughts of lifelong physical exercise. By integrating badminton curriculum with information technology and using information teaching system to build a new teaching mode, students' badminton skills and intelligence are improved in all aspects, and innovative talents are cultivated to provide support for the development of badminton curriculum. In a word, information technology has brought important changes to badminton teaching, promoted the innovation of badminton teaching methods and promoted the development of badminton.

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