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Research on the Model of Public Physical Teaching in Universities in the Context of Modern Information Technology

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Abstract. With the advent of the information and network era, new opportunities have emerged for the development of educational and teaching work. In the context of public physical teaching in universities, the rational application of modern information technology based on actual development situations plays a significant role. It can enrich teaching methods, improve teaching efficiency, meet students' diverse learning experiences, and ensure the quality and efficiency of teaching. However, due to objective factors, there are still some problems in the actual application process, such as the limited ability of some teachers to use information technology and the lack of investment in teaching resources, which directly limit the advantages of information technology and even affect the final teaching effectiveness, leading to counterproductive effects. Therefore, in the future development, it is necessary to strengthen the information technology training for teachers, improve their application ability and information literacy, so that they can better integrate modern information technology with physical teaching. When conditions permit, increase the investment in information technology, improve infrastructure construction, and provide necessary hardware support for public physical teaching in universities.

Keywords: Modern Information Technology; University Education; Public Physical Education.

1. Introduction

With the rapid development of technology and the arrival of the information age, modern information technology has deeply penetrated various fields of social life, including public physical teaching in universities[1-2]. The widespread application of modern information technology provides new teaching methods and resources for public physical teaching in universities, injecting strong momentum into the innovation and development of physical teaching models. The traditional public physical teaching model in universities is too limited to classroom teaching, with single teaching methods and limited resources, which cannot meet the diverse learning needs of students. The introduction of modern information technology breaks this limitation, bringing unprecedented changes to physical teaching. By utilizing video technology, virtual reality technology, mobile application technology, etc., teachers can create vivid teaching videos, simulate real sports scenes, provide personalized learning resources, making physical teaching more intuitive, vivid, attractive, and interesting. However, the application of modern information technology in public physical teaching in universities is still in a process of continuous exploration and improvement. How to fully exploit the advantages of modern information technology, closely integrate it with physical teaching, and optimize teaching effects is an important issue facing public physical teaching in universities today.

2. Current Situation of the Application of Modern Information Technology in Public Physical Teaching in Universities

2.1. Lagging Application Awareness

The lagging awareness of the application of modern information technology among some universities and teachers has become a significant problem hindering the innovative development of physical teaching. Although modern information technology shows significant advantages in improving teaching effects and enriching teaching methods, some universities and teachers have not given it

enough attention[3]. Teachers might think traditional teaching methods are sufficient to meet current teaching needs, lacking the motivation and interest to learn and apply new technologies. This lagging consciousness leads them to hesitate and resist when faced with modern information technology, missing the opportunity to use new technology to improve teaching effects. For example, some physical education teachers still mainly rely on traditional demonstration and explanation methods when teaching, with very limited use of modern information technology. Although schools are equipped with advanced multimedia teaching equipment, many teachers are not familiar with its operation, nor willing to spend time learning and mastering it, leading to an extremely low utilization rate of these devices in teaching, failing to play their due role. The lack of modern information technology support means that physical teaching remains in a traditional mode, lacking innovation in content and methods, affecting students' learning interest and enthusiasm, and limiting the improvement of physical teaching quality.

2.2. Limited Teacher Capability

Teachers' professional capabilities and comprehensive qualities directly affect classroom teaching outcomes and students' learning progress. Improving teachers' information technology application ability is of great significance for the smooth progress of future teaching work. Although modern information technology has significant advantages in enhancing physical teaching effects, some teachers cannot effectively integrate these technologies into physical teaching due to a lack of technical skills. These teachers might not be proficient in operating new media technologies, unable to fully utilize images, audio, videos, and other multimedia elements to enrich teaching content and forms; at the same time, they might not be flexible enough in using online teaching platforms for online communication, resource sharing, and data analysis. If physical education teachers encounter many difficulties when trying to use online teaching platforms for teaching, unfamiliar with the platform's operation interface, unable to smoothly upload courseware, post homework, and conduct online tests; at the same time, lacking experience in online interaction with students, they cannot effectively stimulate students' learning interest and enthusiasm. The existence of these problems directly affects the actual application effect of modern information technology in physical teaching, restricting the innovation and development of physical teaching.

2.3. Insufficient Resource Investment

There is a clear lack of investment and resource integration in modern information technology in physical teaching, severely limiting the effective application and function of modern information technology in this field. On one hand, some universities significantly lack investment in information technology infrastructure, leading to many schools' physical education venues lacking necessary information technology equipment or having outdated equipment, unable to meet the needs of modern physical teaching. This limitation severely restricts physical education teachers' use of information technology in teaching, affecting students' learning experience and outcomes. On the other hand, the absence of an effective resource integration mechanism is a crucial factor hindering the role of modern information technology in physical teaching. Although there is a wealth of physical teaching resources available online, the lack of a unified integration platform and management mechanism makes these resources scattered and difficult to access. The lack of sharing and communication of teaching resources between different universities leads to the underutilization of high-quality teaching resources, indirectly resulting in resource waste and limiting the innovation and development of physical teaching.

3. Optimization Measures for Public Physical Teaching Models in Universities in the Context of Modern Information Technology

3.1. Rational Application of Information Technology

Universities should further promote and strengthen the application of modern information technology in physical teaching to meet the needs of educational development in the new era. For example, by utilizing video technology, virtual reality technology, and mobile application technology, traditional teaching models can be supplemented to inject more vitality and innovation into physical teaching, with comparative effects shown in Figure 1. Video technology, as an intuitive and vivid teaching method, plays an important role in physical teaching. By playing professional athletes' technique videos, students can understand the details and essentials of the movements more clearly, thereby improving learning outcomes. Teachers can also use video technology to record students' practice processes for targeted guidance and evaluation. Virtual reality technology provides a more immersive experience for physical teaching, allowing students to simulate real sports scenarios and practice in real combat through wearing VR devices. This not only stimulates students' interest and enthusiasm for learning but also allows them to practice high-risk movements in a safe environment, reducing the risk of sports injuries[4]. Additionally, mobile application technology brings convenience to physical teaching. By developing mobile applications related to physical teaching, students can access learning resources, engage in self-study, and interact with others anytime, anywhere. This flexible learning method can improve students' learning efficiency, cultivate their self-learning ability, and team spirit.

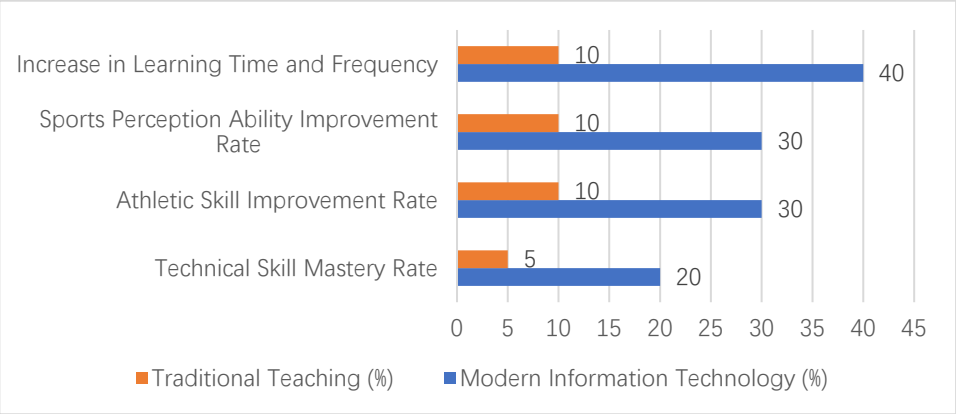

Figure 1. The Significance of the Application of Information Technology

3.2. Respecting Student Autonomy

As the main venue for talent cultivation, universities should keep pace with the times and actively innovate teaching concepts. Establishing a student-centered teaching philosophy is an inevitable trend in educational development and key to improving education quality. Every student is a unique individual with different personalities, interests, and learning needs[5]. Universities should respect these individual differences, discard the traditional "one-size-fits-all" teaching model, and build a truly personalized teaching model. By understanding each student's characteristics, universities can tailor teaching plans suitable for each student, allowing every student to learn and grow in their own way. In the information age, technologies like big data and artificial intelligence provide strong support for personalized teaching. By collecting students' sports data and learning situations, universities can precisely analyze students' learning states and offer customized learning resources. Customized teaching plans better meet students' learning needs, stimulate their interest and enthusiasm for learning, and improve teaching outcomes. Simultaneously, personalized teaching also helps cultivate students' innovative spirit and practical abilities. In a learning environment suited to their own, students can more freely explore knowledge and utilize their imagination, thereby

cultivating more innovative talents to meet the new requirements proposed by the concept of quality education.

3.3. Enhancing Teachers' Information Literacy

Teachers are the core driving force behind the reform of teaching models, especially in the field of physical education. Teachers' professional quality and technical application ability directly affect students' learning outcomes and interest. Universities should regularly conduct professional training to meet established development needs. The rapid development of modern information technology brings new opportunities and challenges to physical teaching. Physical education teachers need to possess solid sports professional knowledge and advanced information technology to effectively combine the two, creating richer and more vivid learning experiences for students. Through systematic information technology training, physical education teachers can learn the latest teaching concepts and technical methods, enhancing their information technology application ability and literacy. Such training helps teachers better utilize modern tools like video, virtual reality, and mobile applications to optimize the teaching process, inspire teachers' innovative spirit, and encourage them to explore teaching models more suitable for students. After a period of exploration, teachers proficiently mastering the application techniques of modern information technology in physical teaching and more accurately grasping students' learning needs to provide customized teaching plans will significantly improve teaching outcomes, stimulate students' interest and enthusiasm for learning, making physical teaching more efficient and interesting.

3.4. Optimizing and Integrating Teaching Resources

As hubs of educational resources, universities possess numerous high-quality physical teaching resources. However, these resources often fail to fully realize their value due to ineffective integration. Therefore, actively integrating high-quality physical teaching resources both within and outside the university, and constructing a shared platform, can truly enhance teaching and learning outcomes. Through this shared platform, teachers can easily access a wider range of teaching resources and experiences, including teaching courseware, video tutorials, and case analyses, which can help enrich teaching content and improve teaching quality. Additionally, teachers can use the platform to exchange and collaborate with other teachers, discussing teaching methods and strategies to continually enhance their teaching skills. For students, a shared platform means access to richer and more diverse learning content and methods. They can encounter excellent courses and teaching cases from different universities and teachers through the platform, broadening their horizons and sparking their interest in learning. The platform can also offer personalized learning recommendations and tutoring services, assisting students in better planning their learning paths and improving learning outcomes, which plays a positive role in promoting innovation and development in university sports education.

3.5. Focusing on Practical Teaching

Practical teaching occupies a significant proportion and holds substantial importance in university physical education, as shown in Table 1. It extends and applies theoretical knowledge and is a crucial step for students to move from books to real-life applications, especially in the field of sports where mastering skills and improving abilities require extensive practical training. The development of modern information technology offers more possibilities and conveniences for practical teaching. For example, virtual reality technology can simulate realistic sports scenes, allowing students to practice in a virtual environment. This is not only safe and convenient but also allows for adjustments in difficulty and parameters to meet the needs of different students. Simulation training software can provide precise training for specific sports projects, helping students identify technical deficiencies through data analysis, thereby making targeted improvements. Through practical teaching, students can more intuitively understand the application and variation of sports skills, deepening their understanding of theoretical knowledge. Repeated training in practice also helps students consolidate

skills and improve athletic abilities. This teaching method, which combines theory and practice, can stimulate students' interest and enthusiasm for learning, helping them better master sports skills and enhance athletic abilities, making physical teaching more efficient and practical.

Table 1. The importance of practical teaching

The importance of practical teaching	Description
Theory and practice are combined	Practical teaching can closely combine theoretical knowledge with practical operation, so that students can deepen their understanding of theoretical knowledge in practice and improve their learning effect.
Skill mastery and improvement	Through practical teaching, students can participate in the training of motor skills in person, master the correct movement essentials, and improve their skill level.
Learning interest and enthusiasm	Practical teaching is often more vivid and interesting, which can stimulate students' interest in learning and enthusiasm, and improve their willingness to take the initiative to participate in sports learning and training.
Comprehensive quality training	Practical teaching helps to cultivate students' teamwork ability, communication ability, innovative thinking and other comprehensive qualities, and lays the foundation for their all-round development.

4. Conclusion

In the context of the information age, public physical teaching in universities should keep pace with the development of the times and advance with the times, which is an important direction for teaching reform. The rational application of information technology based on reality can enrich teaching content, optimize teaching methods, and improve teaching outcomes. However, the application of modern information technology is not achieved overnight; it requires teachers to continuously explore and perfect in practice. To ensure teaching quality and efficiency, teachers should deeply realize their important responsibilities, establish the concept of lifelong learning, actively participate in information technology training, enhance their information literacy and application ability, integrate various advanced technologies into physical teaching, and provide students with high-quality educational services, thereby encouraging students to actively participate in classroom teaching activities. Furthermore, teachers should maintain keen insight, timely apply new technologies to physical teaching, provide continuous motivation for teaching innovation, and promote the innovative development of public physical teaching in universities.

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