Research on Promoting Interactive Teaching Reform of Physical Education Majors in Universities through Information Technology

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Abstract: Information technology (IT) plays an important role in physical education teaching in universities, providing strong support for teaching innovation. Through multimedia and online tools, teaching content can be vividly displayed, stimulating students' interest and initiative in learning. However, in practical applications, there are still some challenges to be faced. The insufficient IT processing ability of physical education teachers limits the depth of teaching innovation. The resources of sports IT courses are limited and the quality is uneven, making it difficult to meet teaching needs. Some teachers are influenced by traditional concepts and have a low acceptance of information-based teaching methods. To overcome these problems, it is necessary to strengthen teacher IT training and enhance their application abilities. Intensify the construction of sports IT course resources, enrich resource content, and improve practicality. We should also actively promote information-based teaching methods, guide teachers to change their concepts, and adapt to the teaching needs of the new era. IT has brought new opportunities to physical education teaching in universities. We should fully utilize its advantages, promote teaching reform, and cultivate more high-quality sports talents.

1. Introduction

The extensive application of modern educational technology has undoubtedly opened up a new world for the teaching and research of physical education courses in colleges and universities [1]. With the rapid development of IT, more and more advanced educational technologies are being introduced into physical education teaching in universities, resulting in profound changes in teaching methods and methods[2].

Traditional physical education teaching in universities often relies on the teacher's words and deeds, and students can only passively receive knowledge in the classroom, lacking sufficient interaction and practical opportunities[3]. However, the introduction of modern educational technology has broken this limitation. Through the application of multimedia, network, virtual reality and other technologies, physical education teaching has become more vivid, intuitive, and interesting. Teachers can use these technologies to create rich and diverse teaching materials, presenting abstract theoretical knowledge to students in a visual and textual form, helping them better understand and master [4].

Modern educational technology offers enriched practical opportunities for teaching physical education in universities[5]. By utilizing virtual reality technology, students can replicate authentic sports environments, allowing for repeated practice and experience, thus enhancing their athletic proficiency[6]. This hands-on approach not only ignites students' passion for learning but also elevates the effectiveness of teaching. The amalgamation of contemporary educational technology with university physical education courses holds immense importance in attaining superior teaching objectives and fostering substantial reforms in physical education instruction. By harnessing IT, educators can precisely assess students' progress, promptly adjust their teaching methods, and tailor their approach to individual students. Learners gain more autonomy in selecting their educational content and methods, fostering self-directed and lifelong learning skills. Contemporary educational

technology has paved new paths and infused momentum into the instruction and exploration of physical education courses in universities[7]. Looking ahead, as IT advances and innovates, I anticipate that university physical education will embrace a wider range of possibilities and a brighter future.

2. The significance of using IT to promote interactive teaching in physical education majors in universities

Many universities still adhere to traditional teaching methods for physical education. This approach is more teacher centered and overly emphasizes one-way indoctrination teaching, often neglecting the student's subjectivity. In this mode, students often only passively receive knowledge, lacking opportunities for active thinking and exploration, and their interest in learning is severely suppressed, making it difficult to fully exert their initiative. This teaching method obviously cannot meet the demand for innovative talents in modern society. In the context of rapid development, what we need are students with independent thinking, innovative spirit, and practical ability, and traditional teaching methods cannot cultivate such talents[8].

In order to change this situation, new teaching concepts and methods are urgently needed in physical education teaching in universities[9]. The rapid development of IT has provided us with possibilities. By combining IT with physical education teaching, not only can teaching methods become novel and diverse, but teaching efficiency can also be greatly improved.

Teachers can use multimedia technology to create vivid and interesting courseware, presenting abstract theoretical knowledge to students in a visual and textual form, and stimulating their interest in learning. Online resources can also be utilized to provide students with rich learning materials and cases, helping them broaden their horizons and enhance practical abilities. By introducing online teaching platforms, teachers can also achieve real-time interaction with students, timely understand their learning situation, adjust teaching strategies, and make teaching more in line with their actual needs.

By combining IT with classroom teaching, not only can physical education teaching in universities be revitalized, but more innovative talents adapted to society can also be cultivated.

3. Advantages and problems of applying IT in the teaching of physical education courses in universities

3.1. Advantages of IT Application in the Teaching of Physical Education Majors in Universities

The widespread application of IT in the teaching of physical education courses in universities undoubtedly injects new vitality into teaching methods, making teaching more flexible and innovative. This emerging teaching method not only enriches teaching methods, but also greatly enhances students' interest and effectiveness in learning.

IT has made the teaching methods of physical education courses in universities more innovative and diversified. Traditional physical education teaching often relies on the teacher's demonstration and the student's imitation. Although this approach is intuitive, it is limited to the teacher's personal ability and the student's understanding ability. The introduction of IT enables teaching to fully utilize advanced tools such as multimedia and networks, presenting teaching content in various forms such as graphics, animations, and videos, making teaching more vivid and interesting.

IT can enhance students' interest in learning. Through IT, teachers can create rich and colorful teaching materials, transforming abstract theoretical knowledge into intuitive visual experiences, making it easier for students to understand and accept. At the same time, IT can also provide rich learning resources and interactive platforms, allowing students to engage in self-directed learning and communication discussions anytime and anywhere, thereby stimulating their learning enthusiasm and initiative.

The application of IT has also made teaching more accessible to a wider audience. In traditional

teaching methods, due to the limitations of teaching resources, many high-quality teaching resources and experiences cannot be effectively disseminated and shared. With the help of IT, teachers can turn their teaching experience and achievements into online courses or teaching resource libraries for more students and learners to use and learn, thereby achieving the maximum utilization of teaching resources.

IT has the potential to overcome teachers' inherent shortcomings and limitations, thereby significantly enhancing teaching efficacy. Consider, for instance, complex technical moves that are challenging to demonstrate live. Educators can leverage IT to generate 3D animations or videos, providing learners with a clearer, more comprehensive grasp of the moves' intricacies and techniques. Additionally, IT enables real-time feedback and data analysis, empowering teachers to better comprehend students' learning progress, promptly refine teaching approaches, and ultimately elevate teaching effectiveness.

The application of IT in the teaching of physical education courses in universities is of great significance and value. It can not only innovate teaching methods and means, enhance students' learning interest and effectiveness, but also achieve maximum utilization of teaching resources and comprehensively improve teaching effectiveness. Therefore, we should actively promote and apply IT to inject new impetus into the teaching reform and development of physical education courses in universities. Table 1 clearly shows the application of IT in the teaching of physical education courses in universities, its importance, and its impact and effects on teaching and students.

Table 1 Application and related information of IT in the teaching of physical education courses in universities

In terms of IT application	Specific description	Importance	Impact and Effect
Innovation in teaching methods	Using multimedia and online tools to present teaching content in the form of graphics, animations, videos, etc	Significant improvement	Make teaching more vivid and interesting, and enhance learning interest
Providing learning resources	Create rich teaching materials, provide learning resources and interactive platforms	Critical	Help students understand and accept knowledge more easily, stimulate learning enthusiasm
Expansion of teaching audience	Create online courses or teaching resource libraries for more students to use	Significant significance	Maximizing the utilization of teaching resources and promoting resource sharing
Teacher's ability improvement	Overcoming the limitations of teachers themselves and providing real-time feedback and data analysis functions	The key lies in	Help teachers better understand the learning situation of students and improve teaching effectiveness

3.2. The application of IT in the teaching of physical education courses in universities

With the rapid development of IT, its application in the field of education is becoming increasingly widespread. However, in the informatization process of physical education courses, we have found that the level of IT course development by physical education teachers is still insufficient, which to some extent restricts the modernization process of physical education course teaching.

We must face the problem of insufficient IT processing ability of physical education teachers. Many teachers, due to the lack of corresponding IT training and practice, can only stay at the basic level in curriculum development, unable to deeply explore the potential of IT and inject more vitality into physical education teaching. This not only affects the teaching quality of physical

education courses, but also limits the opportunities for students to receive modern education.

The insufficient resources of sports IT courses are also an important factor restricting the development of IT. At present, the sources of sports IT course resources are relatively limited and the quality is uneven. The practicality of sports related information in some resource libraries is not strong, and the content is outdated, which cannot meet the actual needs of sports teachers. This leads to a lack of sufficient materials and resource support for physical education teachers in curriculum development, making it difficult to produce high-quality information-based courses.

Due to the long-term influence of traditional teaching methods, many physical education teachers are accustomed to traditional teaching methods and have a low acceptance of information-based teaching methods. They often believe that traditional teaching methods are more familiar and effective, so they lack some motivation for the information development of physical education courses. This conceptual obstacle is also an important factor restricting the process of sports informatization.

In order to improve the level of IT curriculum development for physical education teachers, we first need to strengthen their IT training and improve their IT processing abilities. At the same time, we also need to strengthen the construction of sports IT course resources, enrich the content of the resource library, and improve the practicality and timeliness of resources. In addition, we should actively promote information-based teaching methods, guide teachers to gradually change their concepts, accept and adapt to new teaching methods. Table 2 clearly lists the problems, current situation, and impact of the application of IT in the teaching of physical education courses in universities.

Table 2 Problems, Current Situation, and Impact of IT Application in the Teaching of Physical Education Majors in Universities

In terms of issues	Current situation description	Influence
Insufficient IT processing ability of teachers	Lack of IT training and practice, curriculum development remains at a basic level	Affects the quality of physical education teaching and limits students' opportunities to receive modern education
Insufficient resources for sports IT courses	Limited resource sources, uneven quality, weak practicality, and outdated content	Physical education teachers lack material and resource support, making it difficult to produce high-quality information-based courses
Teachers have low acceptance of information-based teaching methods	Influenced by traditional teaching methods, it is believed that traditional methods are more familiar and effective, lacking motivation for IT development	Restrict the process of sports informatization

4. Application methods of IT in physical education teaching in universities

The widespread application of IT in today's society has not only changed people's way of life, but also triggered profound changes in the field of education. Especially in the teaching of physical education majors in universities, the introduction of IT not only brings new possibilities to teaching, but also becomes an important tool for promoting educational reform and innovation.

To promote interactive teaching in sports majors in universities through IT, it is first necessary to strengthen investment in infrastructure. This includes building high-performance computer classrooms, equipping advanced multimedia teaching equipment, and creating a high-speed and stable campus network. Only by ensuring the completeness of these infrastructure can a solid material foundation be provided for the widespread application of IT in teaching. Improving the integration of teaching resources is also crucial. Universities should actively build a digital resource

library for physical education teaching, integrating and categorizing various physical education teaching resources, such as videos, courseware, cases, etc. This not only facilitates teachers and students to access the necessary teaching resources anytime and anywhere, but also promotes the sharing and optimization of teaching resources. In promoting the informatization process of physical education teaching, we also need to draw on the successful experience of informationization reform in other disciplines. By comparing and analyzing successful cases of IT application in other disciplines, we can find a suitable path for the development of IT in physical education teaching, avoid detours, and improve reform efficiency. Universities should strengthen exchanges and discussions among various disciplines of physical education. By regularly holding seminars, sharing sessions, and other activities, we can promote experience exchange and information sharing among different universities, and jointly promote the improvement and optimization of physical education curriculum resources.

Promoting interactive teaching of physical education majors in universities through IT is a long-term and arduous task. We need to continuously strengthen infrastructure investment, improve the integration of teaching resources, draw on successful experiences, and strengthen disciplinary exchanges and discussions to jointly promote the informatization process of physical education teaching in universities.

5. Conclusions

The application of IT in physical education teaching in universities has gradually demonstrated its unique advantages and potential, bringing novelty and diversification to the teaching methods of physical education courses in universities. Traditional physical education teaching often relies on teacher demonstration and student imitation, but this approach is limited by the individual abilities of teachers and students, and the introduction of IT greatly enriches teaching methods and approaches.

IT can present teaching content in various forms such as graphics, animations, and videos, making teaching more vivid and interesting. Through multimedia and online tools, teachers can create rich and colorful teaching materials, transform abstract theoretical knowledge into intuitive visual experiences, and help students better understand and accept them. This audio-visual teaching method not only enhances students' interest in learning, but also enhances their learning effectiveness. IT can also provide abundant learning resources and interactive platforms, providing students with a broader learning space. Students can engage in self-directed learning and exchange discussions anytime and anywhere through online platforms, interact in real-time with teachers and classmates, and share learning experiences and insights. This open learning approach stimulates students' initiative and creativity, promoting their comprehensive development.

Despite achieving notable progress, the integration of information technology in university physical education still faces challenges. First and foremost, the information technology proficiency of physical education instructors remains inadequate, necessitating further training and hands-on experience. Secondly, resources for sports-related IT courses are scarce, emphasizing the need for greater investment in resource development and consolidation. Lastly, some PE teachers exhibit resistance towards technology-driven teaching methodologies, indicating a need for a shift in their mindset and approach. Leveraging IT in university physical education holds tremendous significance. We must capitalize on the strengths of IT, innovate teaching strategies, elevate students' engagement and learning outcomes, optimize teaching resource allocation, and ultimately enhance overall teaching efficacy. Simultaneously, we must confront prevalent issues and obstacles, implement effective solutions, and foster the continued growth of IT in university physical education courses.

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