Application of Computer Multimedia Technology in the Reform and Innovation of Physical Education Teaching in Colleges and Universities

Chunquan Zhu�*

�Sichuan Vocational and Technical College, Sichuan, Suining, China, 629000

*Corresponding author e-mail: zhuchunquan1979@163.com

Abstract. The application of computer multimedia technology has a very important support and significance for the implementation of the reform of physical education in Colleges and universities. In the related teaching activities, we should make clear the advantages of computer multimedia teaching in the reform and innovation of physical education in Colleges and universities, scientifically build a set of effective work application ideas, and give full play to its advantages, showing more educational value.

Keywords: Multimedia Technology, Physical Education, Reform and Innovation

1. Multimedie Technology

Through calculation and processing, so that a variety of media to establish a logical connection, integrated into a real-time and interactive systematic performance of information technology. In short, multimedia technology is a computer technology that processes picture, text , sound and image information and makes the mintegrated and interactive .It can effectively promote the reform of the content and mode of physical education , change the traditional thought and way of physical education , and promote the modernization and scientization of physical education methods. It can be said that in the modern college physical education, the advantages of multimedia technology are very obvious, has become indispensable. [1]

The real object of multimedia technology is the product of computer technology, while other simple things, such as film, television, audio, etc., do not belong to the category of multimedia technology. The media in multimedia technology mainly refers to the former, that is, the use of computers to digitize media information such as text, graphics, images, animation, sound and video. Multimedia teaching courseware can display certain education and teaching information to students through text. It can also provide certain help and guidance information for students to learn independently with multimedia when they encounter difficulties, so that students' learning can go on smoothly. Some full-featured teaching software can also provide certain learning evaluation information and corresponding guidance...
information for learning according to students' learning results and feedback information from students. (see figure 1)

![Figure 1. display of modern multimedia technology](image)

2. The significance of multimedia teaching

In the teaching process, teachers can not refine the whole action, some changes of the action can not be expressed in language, only roughly divide the teaching into several parts. On the basis of traditional teaching mode, multimedia teaching is combined with high technology. It can greatly stimulate students' learning enthusiasm, help teachers fully explain technical behavior in teaching, and effectively promote the update of teaching technology. This means that the new teaching mode can maximize the enthusiasm and interest of students. [3]

3. Using multimedia technology to improve physical education teaching effect

3.1. The changing teaching mode

Teaching mode is a kind of teaching structure and activity procedure theory which is established to complete the specific teaching purpose and teaching content under the guidance of certain educational thought and educational thought. Teaching mode is the behavior mode of teachers' teaching. If teachers apply multimedia technology to PE teaching and redesign PE teaching, their teaching methods will be updated. Teaching mode is the behavior mode of teachers' teaching.

Through the network interactive teaching, we can more accurately understand the teaching situation at home and abroad, and show students a variety of sports audio-visual material time. The development trend of physical education determines that a considerable part of teaching content needs digital interaction and interactive dynamic demonstration, which is a teaching method that traditional physical education cannot achieve. Now, all schools have built the campus network platform, built multimedia classroom teaching system, school modern management system, video system, teacher lesson preparation system, creating the condition mode for the renewal of teaching. When students encounter
some problems in sports activities, they can use multimedia network classroom for self-study, and find relevant information to solve the problems encountered. [4](see figure 2)

![Figure 2](image)

Figure 2. transmission path of multimedia technology

3.2. Explanation of teaching process

In addition, in the process of physics teaching, some technical movements are difficult to describe clearly with language, especially the details of turning, flying and high-speed technology, which are difficult to explain, and the demonstration effect is very poor and unsatisfactory. We can use the design of two-dimensional and three-dimensional space multimedia courseware to comprehensively analyze the process and difficulties of action, turn difficult into easy, and easily solve the problem of explaining and demonstrating difficult actions. Help students quickly understand the action, form concept, memory structure, establish clear action image in the brain, speed up learning speed and promote learning efficiency. In teaching, if students can not only see the standard and beautiful demonstration of the coach, but also have the concise and accurate explanation of the coach, it is also conducive to the students to master the technical time in a short time. If teachers create new teaching links and let students express their learning content in their own language through discussion and communication, the maintenance of knowledge is much better than the traditional teaching effect. Multimedia teaching means will make this teaching assumption come true. [5](see figure 3)

![Figure 3](image)

Figure 3. Control function diagram
3.3. Progress in teaching technology

The concept of physical education has changed. In the traditional physical education teaching, teachers are the main part. Students understand and learn the knowledge taught by teachers. This learning method emphasizes teachers' education and ignores students' learning. Students are in a passive state of accepting knowledge, which hinders the improvement of students' innovative ability and practical ability.

However, most of the teaching of sports knowledge is action technology, which is difficult to master completely through oral or occasional demonstration. For example, some technical movements are more difficult, and some technical movements are coherent. In the physical education teaching of such technical movements, it is difficult for students to see the details of the completion of technical movements. In this case, if the teacher can use multimedia technology, it can easily play the technical action slowly, and the details of the technical action can be accurately presented, which can significantly improve the students’ understanding of the technical action. In addition, with the increase of age, many P.E. teachers will not be able to complete many difficult technical movements, resulting in inaccurate movements and misleading students’ practice. If only taking the way of explanation instead of action demonstration, it will often affect the teaching process and reduce the teaching effect.

These problems can be avoided if multimedia technology is adopted to show the physical education courses in the form of words, graphics and videos. (see figure 4)

![Multimedia technology flow chart](image)

**Figure 4.** Multimedia technology flow chart

4. Using multimedia technology to improve students’ learning initiative

4.1. Breaking the traditional learning concept

Multimedia technology is not only a rich resource, but also a useful learning tool, which changes peoples life and work style and students’ learning style. It transforms the face-to-face communication between teachers and students into the interaction between teachers, computers and students. It creates a learning environment that is not limited by time and place between teachers and students, students and human-computer. It expands students' learning methods, endows students with learning initiative, and makes computer multimedia and network become the media of students' Learning & apos; learning. According to students' needs, interests and some problems in physical exercise, students can quickly collect rich
sports information on the Internet, query the answers, and deal with the information purposefully. Make students learn how to learn and enrich life experience.

This process is conducive to the cultivation of students' awareness of inquiry and innovation, and to the active development of inquiry learning activities. The application of multimedia not only stimulates the players' interest in sports, but also helps to give full play to the enthusiasm of team members, helps them learn knowledge from multimedia, collect and analyze materials and data consciously, and verifies various technical problems and technical hypotheses put forward by them. Finally, under the guidance of teachers, we can draw the correct conclusion in our discussion, students. For example, students can watch the game through television, Internet and other media, analyze the competition data, so as to improve their understanding of the game. Active participation in learning, exercise, these are the necessary conditions for the rapid growth of students. [6]

4.2. How to effectively solve the difficulties of multimedia technology in Teaching

In the past physical education teaching, the key and difficult points of movements should be repeatedly demonstrated by teachers. It is emphasized that a class should be repeated many times. When we encounter these problems, we often feel helpless when there is no solution. With its flexible functions of dynamic and static, fast and slow, continuous and heavy division, we can solve the key and difficult problems in a short time that the teacher has been talking about for a long time, and the key and difficult points in teaching can be changed from abstract to vivid. From "micro" to "macro", students can understand the action essentials correctly and save teaching time.

For example: in the hurdle teaching, due to the high technical content and exquisite skills, teachers have some difficulties in explaining and demonstrating. Because the teacher’s demonstration is fleeting, it is difficult for students to observe carefully, Multimedia courseware can make use of the design of two dimensional and three dimensional space, turn text into image, turn dynamic into static, change fast into slow, show every subtle change of technical link one by one, show the key points in an all-round way, analyze the difficulties, and add the teacher’s explanation, students will be able to understand, and play a positive role in promoting students to quickly learn technology.

5. Conclusion

The traditional teaching method takes the teacher, the classroom, the teaching material as the center, has formed the serious mechanization classroom atmosphere, attaches importance to the teacher's main body status, the teaching method is unitary, the student is in the passive acceptance knowledge position, has neglected the student; the participation and the creativity. With the introduction of the concept of happy sports in Japan, it began to oppose the traditional teaching methods which ignored students' interests and personal needs, emphasized the cultivation of students' initiative, happiness and diversity, and attached importance to the dominant position of students' active participation.

Acknowledgments

This work was financially supported by General project of humanities and social sciences of sichuan education department in 2018: "research on the innovation of PE teaching diagnosis and management in higher vocational colleges" (project no.: 18SB0702).
References

[1] Zhang jiaoru; analysis of the application of multimedia technology in College Physical Education Classroom Teaching [J]; sports world (Academic Edition); 2012.

[2] Wang Qingchun, Wu Hongqing; multimedia technology and its influence on education [J]; journal of Kunming Metallurgy College; 2000.

[3] Wang Dequan; application of multimedia technology in college physical education reform and innovation [C]; intelligence; 2019.

[4] Tian Lin; on the effective application of multimedia technology in college physical education teaching; software [J]: education modernization; 2012.

[5] Zheng Chao, Wang Hongyao; on the application of multimedia technology in college physical education [C]; science and education collection; 2008.

[6] Zhang Li; on the application of multimedia technology in physical education [C]; selected journals of young writers (Teaching Exchange); 2017.