# Research on the Application of Multimedia Technology in Physical Education Teaching in Higher Vocational Colleges

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**Abstract:** With the popularization of modern information technology, multimedia technology is widely used in teaching. In view of the characteristics of physical education, this study aims at the existing problems of traditional physical education teaching in colleges and universities, and extends the multimedia network teaching platform to physical education teaching in colleges and universities. Through the use of multimedia network teaching platform, modern teaching and traditional teaching can complement each other. Research shows that multimedia education technology is effectively combined with physical education in higher vocational colleges. It can give full play to the leading role of teachers and the main role of students, and can stimulate students' enthusiasm and interest in sports learning. Through the training of teachers' multimedia-assisted foreign language teaching theory, the teachers' multimedia skills will be improved; the English teaching methods in higher vocational colleges will be rectified, and the teaching effect will be improved by teaching students in accordance with their aptitude; and the construction of multimedia teaching software and hardware will be strengthened.

## 1. Introduction

Multimedia teaching is the inevitable result of the development of modern information technology. The application of multimedia technology in Physical Education in Higher Vocational Colleges adapts to the requirements of current teaching reform, effectively promotes students' interest in learning, and at the same time improves the quality of physical education in Higher Vocational Colleges [1]. The aim of physical education teaching in higher vocational colleges is to strengthen students' physique and lay a good foundation for students' study. It has become the focus of people's attention in teaching, and also one of the important symbols to measure the level of audio-visual education in a higher vocational college [2]. Multimedia technology is playing an increasingly important role in the physical education discipline that integrates knowledge transfer, skill development and physical exercise. It creates an environment for students to learn, research and explore, making it easier for students to master sports skills and experience sports fun [3]. At the same time, through the study of public sports in higher vocational colleges, on the one hand, students' interest in sports learning is cultivated. On the other hand, to improve students' self-learning ability, and finally to achieve effective learning methods and strategies, students' comprehensive cultural literacy and cross-cultural communication awareness and ability are improved. It also lays a solid foundation for students' future employment competitiveness [4].

Since 2013, the emotional intelligence and self-efficacy of physical education teachers have been studied by relevant scholars [5]. After that, the attitude of college students towards physical education was put forward by relevant scholars [6]. Since 2015, the curriculum of sports has been put forward by relevant scholars [7]. Interactivity is the most important manifestation of the change from passive to active information acquisition and use, and learners can effectively control it according to their own needs. In the early single text space learning, learners can only "use" information, but it is difficult to control and intervene in the processing of information [8]. When interaction is introduced, the activity itself as a media intervenes in the process of information transforming into knowledge, and learners can get more information by means of activities. Whether it is "Sports Outline" or "Sports and Health Curriculum Standards". In the course arrangement, a certain proportion of theoretical courses are required every semester, involving

knowledge of sports competition, physiology, psychology and health. These contents are very suitable for multimedia classroom. The Internet, represented by the Internet, eliminates the limitations of space-time and human factors, which enables students to acquire a lot of knowledge. The original teaching mode is singular, and network-assisted teaching helps two-way communication between teachers and students [9]. It is more conducive to the individualized learning of students and the sharing of physical education resources, which is conducive to improving the teaching efficiency of physical education teachers. At the same time, it also expounds the problems that should be emphasized in the application of network teaching technology in physical education. It is pointed out that teachers should update their concepts and give full play to the concept of taking students as the main body in the process of physical education and at the same time play the leading role of teachers [10].

## 2. Materials and Methods

In modern cognitive psychology, attention is the central concept of the theoretical framework of information processing. Attention is a psychological phenomenon that individuals are driven by internal and external motives and selectively point to and focus on certain objects or activities. Cognitive psychology especially emphasizes the selectivity of attention. Attention is regarded as the internal mechanism of information processing. Its basic function is to select information and regulate behavior. The selective attention theory is an intrinsic law about how the human brain conducts information processing from a large number of psychological experimental research. Therefore, this law has a strong guiding significance for the use of multimedia technology for teaching. The emergence of multimedia network teaching makes the sharing of educational resources possible, and the sharing of information and equipment can be optimized through the multimedia network teaching platform. So that the entire teaching process can be carried out smoothly, and the teaching purpose can be better accomplished. The role of multimedia technology in physical education in vocational colleges is shown in Table 1.

Table 1 The Role of Multimedia Technology in Physical Education Teaching in Higher Vocational Colleges

|  | Fuse | Effect |
|---|---|---|
| Stimulating Students' Interest in Learning | 20.09 | 18.75 |
| Solving the Difficulties in Technical Action | 15.42 | 17.08 |

Physical education teaching is to impart sports theory knowledge, sports technology, sports skills as the main teaching content, the most fundamental purpose of which is to enhance the physical fitness of students. Physical education belongs to technical teaching, which is mainly used for students' Self-physical practice. Similarly, the monotony of the means of information exchange will limit the further needs of applications. Therefore, the integration of multimedia is mainly manifested in two aspects. On the one hand, multimedia technology can organically combine various media information into a complete multimedia information. On the other hand, it integrates different media devices to form a multimedia system. Multimedia system is called "multimedia" because it is a collection of various information carriers and entities that store information. Using multimedia technology, teachers can pause, slow play or play the required audio and video materials during teaching or students in self-study. Or the text description synchronously runs with the video screen to form a multi-integrated multi-capacity teaching content combining dynamic and static, achieving the purpose of audio-visual combination, vivid and interesting, intuitive image, easy to observe and imitate.

The main task of physical education teaching is to enable students to master certain sports skills, so as to develop the habit of physical exercise in the future study, work and life, so as to achieve the goal of lifelong physical education. The combination of audio-visual media is superior to the pure visual and auditory media in providing information and directly and truly reflecting the characteristics of motion change. In the constructivist learning environment, instructional design

should not only achieve the correct teaching purpose, but also complete the teaching task satisfactorily. Moreover, it is necessary to create learning situations that are conducive to students' meaning construction, clear purpose and attractive links. Therefore, the design of "situation" in instructional design must be the top priority. The second is "collaboration", and we always insist on collaboration in the process of learning. Correctly handle the relationship between multimedia teaching methods and other teaching methods. The use of multimedia for teaching is to highlight key points, break through difficult points, and help to achieve better and faster teaching goals. This is beyond doubt. However, this does not mean that it can replace all teaching methods. Only a variety of teaching methods coexist, each with its own strengths and complementary advantages, in order to achieve better teaching results.

## 3. Result Analysis and Discussion

The application of multimedia technology in physical education teaching in higher vocational colleges has greatly improved the current learning situation and stimulated students' learning desire. Multimedia technology is an advanced teaching mode which integrates sound, image and video. It will attract students' attention and stimulate their desire to study and explore. This novel teaching method is in line with the characteristics of current school life and active, and also creates a good learning environment for students. Allowing students to learn the theoretical knowledge while watching the video, and promote the improvement of teaching efficiency. Using the computer, teachers can display various information related to the teaching content of this lesson in the classroom to help students master more teaching content or cutting-edge knowledge of the subject. In order to stimulate students' deeper desire for knowledge. The logical structure of the multimedia teaching sub-module is shown in Figure 1.
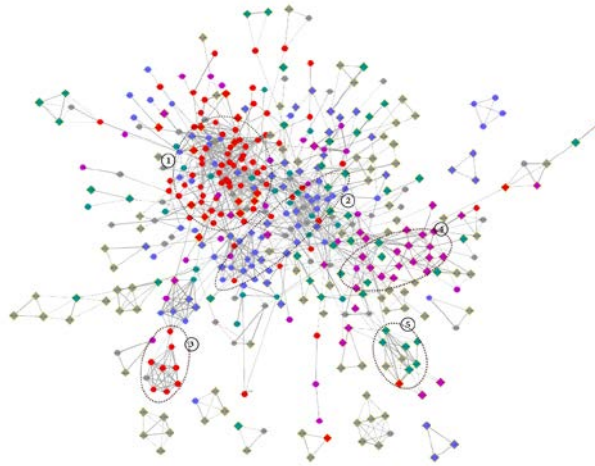


Fig.1. Logic Structure of Multimedia Teaching Submodule

The relationship between "human" and "machine" roles is an important component of the multimedia network physical education teaching model. "Human" refers to educators and learners, and "machine" refers to the technological environment such as multimedia equipment and network equipment. The human-computer role relationship includes the relationship between teachers and students and the relationship between teachers and students and computer network. In the process of physical education teaching, teachers - Computers - students have formed a special teaching relationship, in such a teaching environment. Teachers and students have formed a new teaching mode and teacher-student relationship through the media of computer network. Collaborative learning is also a process of conversation, in which each learner's thinking results are shared by the whole learning group, so conversation is one of the important means to achieve meaning construction. "meaning construction" is the ultimate goal and result of the entire learning process. The meaning to be constructed refers to the meaning of knowledge or learning themes, that is, the nature and laws of things and the intrinsic relationship between things. The construction of meaning has reached a deeper understanding of things. In short, we must accept the concept of multimedia

teaching with a development and forward-looking vision, and we must treat the traditional teaching methods of sports with a positive and solid attitude, so that the two interact and complement each other.

Through the production of multimedia courseware, teachers can easily collect video, audio and pictures scattered in different videos, videos, VCD and related online materials according to teaching needs. Then they are reasonably added to the courseware and applied to physical education teaching. Teachers or students can pause, slow down or play the required audio and video materials many times in their teaching or self-study. Or the multi-capacity teaching content which combines the dynamic and static functions by synchronizing the text description with the video pictures, so as to achieve the goal of audio-visual integration, vivid and interesting, intuitive image, easy observation and imitation. Virtual reality is a computer multimedia technology that makes a set of images into a three-dimensional object or a 360-degree panoramic image that can be controlled by a special means. When viewing a virtual reality object on a computer, you only need to use the mouse to push on the object, and the object can be rotated in the corresponding direction, just like the real thing is held in the hand, you can flip it at will. Using virtual reality technology, you can refine the display of physical exercise movements. For example, for the same posture, students can observe the action essentials from different angles. Create a concept of action, then take a picture of the student's movements, let them watch their movements, and compare them with the correct movements in the courseware to develop the correct movement habits. The effect of media technology teaching on the teaching effect of sports theory is shown in Figure 2.
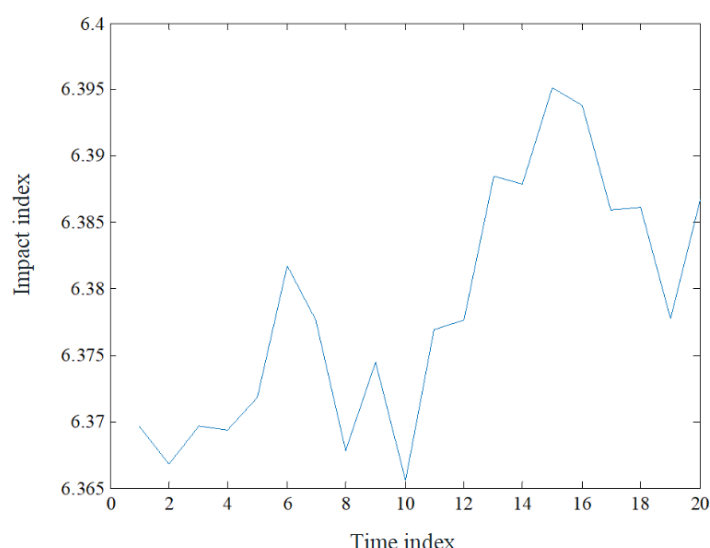


Fig.2. The Influence of Media Technology Teaching on the Teaching Effect of Sports Theory

## 4. Conclusion

With the extensive development of information technology, multimedia technology is more and more widely applied to physical education teaching in Higher Vocational colleges, and has achieved certain teaching results. To give full play to the advantages of multimedia teaching and create a new teaching model for teaching reform and exploration is not only conducive to cultivating students' innovative ability and innovative thinking in Higher Vocational colleges. It is also helpful for teachers to play their leading role in the teaching process. As physical education teachers in Higher Vocational colleges, we should constantly improve our comprehensive quality, constantly update and establish their own knowledge structure. The promotion of multimedia network teaching platform in physical education can not only complement the advantages of traditional college physical education, but also improve the physical education of colleges and universities. It is also a learning platform for students to learn independently and personalize. The opening of the network has made teaching activities break the scope of time and space, and teaching activities are no longer limited to the classroom. Students can decide the time and content of their study based on their own

learning abilities and interests. Teachers can conduct theoretical paperless examination research according to the characteristics of the network, and establish a test database to enable students to acquire more relevant knowledge through network multimedia and improve the theoretical level.

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