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Experimental Research on Multimedia Mode in the Teaching of College Physical Education Development Training

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Abstract: *Today, with the rapid and rapid development of science and technology, science and technology are continuously used in all walks of life, especially in the teaching process, becoming an important means of modern teaching. This kind of reform and development has a better development of teaching quality and level. Great improvement. Multimedia teaching has the advantages of large amount of information, rapid feedback, rich content and high interaction efficiency. Multimedia teaching can also improve students' interest in learning, motivate students' craving for knowledge, help students improve their learning efficiency, and thus reach the ability to cultivate students' independent learning. . As a modern physical education teacher, we should keep pace with the times, master modern science and technology such as multimedia, and combine with traditional physical education in the past to better serve students' physical education. College sports development training is a special stage of student training. College sports development training can not only enhance students' physical quality, improve students' performance of sports development training, improve the overall level of sports development training, and is of great significance for providing backup talents for China. . This paper focuses on the advantages and problems of multimedia technology in assisting college basketball development training, adheres to the spirit of student-oriented, fully considers the physical and mental characteristics of middle school students, explores effective strategies for strengthening the application of multimedia technology in sports development training, and uses multimedia for colleges and universities in China. Provide reference for auxiliary sports development training.*

Keywords: *Multimedia Mode, Sports Development Training, Information Technology, Experimental Research*

1. Introduction

With the rapid development of modern science and technology and the continuous deepening of education reform in China, multimedia-assisted instruction has gradually entered the school [1-3]. As an important part of education, school sports should seize the opportunity of the development of the times, adapt to the characteristics and trends of the times and social development, reform the traditional sports development training mode, and establish a new type of sports development training mode with characteristics of the times to enable training. Process optimization [4,5]. According to the theoretical principles of multimedia program system design, on the basis of determining the training objectives, teaching media and training content system and knowledge points, various development tools are used to integrate various sports media materials on the system platform, and the students are designed and produced. The center is close to the training course and graphical multimedia courseware [6-8]. Through the experimental research on the use of multimedia courseware-assisted training in sports development training, to test the feasibility and effectiveness of multimedia courseware-assisted training, collect students' opinions on multimedia training methods, and provide teachers with modern teaching methods in sports training. Reference basis and accumulated data [9-11].

The use of multimedia technology in the field of teaching, foreign research time is much earlier than domestic; some countries in Europe and the United States have applied such scientific research results to teaching as early as the beginning of the 20th century, which has more rapidly developed multimedia [12]. At the end of the 20th century, more and more people began to recognize and use computer networks. The development direction of modern multimedia technology began to be applied in the field of teaching [13]. Since the beginning of the 21st century, computer and multimedia

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technology have entered a period of rapid development. From the perspective of many developed countries in the world, the application of multimedia technology in the field of teaching has become their mainstream trend [14-15]. In developed countries with rapid technological development, the development of computer level has been relatively rapid and naturally led to the development of multimedia technology. From the mode of using multimedia technology in some primary and secondary schools in the United States, it can be summarized into four aspects: "conventional" mode refers to the use of audio-visual equipment such as slide projectors, projectors, etc.; "multi-media" mode refers to the use of multimedia computers; the "network" mode is Refers to the use of the Internet; "virtual reality" mode refers to the use of computer simulation technology [16-17]. Megan Kaulius, Mark R Beauchamp and other scholars believe that multimedia intervention teaching is a simple and cost-effective intervention that can support the interaction between teachers and students. In turn, this interaction has the potential to positively influence students' perceptions and participation in physical activity [18]. For a clearer layout, Anita Rončević analyzed the relationship between multimedia and other structural elements in the field of teaching methods in various teaching modes (Berlin model, Hamburg model), and designed a multi-factor teaching model. The multi-factor teaching model includes the following: students, teachers, other multimedia and media, courses, teaching principles, teaching objectives, types of teaching activities, teaching methods and techniques, social work forms and spatial material (physical) conditions. All of these are elements of interaction and complementarity [19].

In China, Fan Liping believes that multimedia technology will become an important auxiliary means of physical education reform in the new century. It will change the teaching theory, teaching mode and teaching methods from the changes in teaching content, teaching mode and teaching methods. Multimedia technology will break through the bilateral interaction between teachers and students in traditional physical education, and realize the teacher-multimedia computer-student's three-way combination activities, making teaching activities more vivid, active and effective [20]. Yan Xumei believes that the development of multimedia technology reflects the needs of the development of modern educational technology. Modern teaching methods have the advantages of optimizing physical education classroom teaching, stimulating students' motivation and interest in sports learning, deepening students' understanding of action concepts and sports theory knowledge, and improving the quality of physical education. Very important meaning and role [21]. The use of multimedia teaching will get twice the result with half the effort. The teaching of sports technology classes, such as track and field, gymnastics, ball games, etc., also has obvious advantages. It is easy to remember the action essentials through visual image display of standard movements. Then, with the guidance of teachers, the movement technology will grow rapidly [22]. Yang Hao believes that multimedia technology can provide diversified teaching resources for college physical education, which will have a certain impact on traditional physical education concepts, teaching models, teaching methods, and physical education organization forms [23]. The introduction of multimedia technology in the teaching process of college physical education can make students more motivated in the course of class. Combined with the targeted guidance of teachers [24], it can better stimulate students' enthusiasm for learning, thus better promoting the implementation of college physical education. [25].

College sports development training is a special stage of student training. College sports development training can not only enhance students' physical quality, improve students' performance of sports development training, improve the overall level of sports development training, and is of great significance for providing backup talents for China. This paper focuses on the advantages and problems of multimedia technology in assisting college basketball development training, adheres to the spirit of student-oriented, fully considers the physical and mental characteristics of middle school students, explores effective strategies for strengthening the application of multimedia technology in sports development training, and uses multimedia for colleges and universities in China. Provide reference for auxiliary sports development training.

2. The Application of Multimedia Mode in the Teaching of College Physical Education Development Training

2.1. Theoretical Basis for the Application of Multimedia Mode in the Teaching of College Physical Education Development Training

(1) Dual coding theory

The dual coding theory believes that we must encode learning materials in order to effectively

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maintain and extract. There are two functionally independent but interconnected processing systems in the human brain: one is a language-based processing system and the other is an image-based processing system. The imagery system specializes in the representation and processing of non-verbal objects and events. It consists of image representations that are related to each other. The language system representation and processing of speech information consists of interrelated verbal representations.

The dual coding theory holds that if a material not only has image coding but also semantic coding, it is called double coding, and the double coded material can be maintained for a long time. Experimental psychologist Chiretra has made two famous psychological experiments. One is about the source of human access to information, that is, the main ways through which humans obtain information. He has confirmed through a large number of experiments: 83% of the information obtained by humans comes from vision, and n% comes from hearing, which adds up to 94%. Another 3.5% comes from the sense of smell, 1.5% comes from touch, and 1% comes from taste. Multimedia technology is both visible and audible, and can be manipulated by hand. The amount of information that is obtained through the stimulation of multiple senses is much stronger than listening to the teacher alone. Information and knowledge are closely related, and you can gain more knowledge by acquiring a large amount of information. He also did another experiment, an experiment about knowledge retention, that is, memory persistence. The result is this: people generally remember 10% of their reading content, they hear 20% of the content, they see 30% of the content, they hear and see 50% of the content, and they communicate in the process of communication. Say 70% of the content. That is to say, if you can hear and see it, and then express it in your own language through discussion and communication, the maintenance of knowledge will be much better than the effect of traditional teaching.

(2) Multiple intelligence theory

In a certain social and cultural context, the ability of an individual to solve practical problems encountered and the ability to produce and create products needed by society depend on intelligence; structurally, intelligence refers to an ability that includes Seven intellectual factors, namely mathematical logic ability, verbal language ability, spatial visual ability, physical exercise ability, musical rhythm ability, interpersonal relationship ability, self-awareness and self-examination ability; these seven intellectual factors are like seven pillars, although they are each It is independent, but together supports the "intellectual" "house"; each kind of intelligence represents a unique thinking mode different from other intelligences, but they do not operate independently, but coexist and complement each other. And integrated operation. The theory of multiple intelligences tells us that the integration of multimedia technology and physical training helps to teach students in accordance with their aptitude and helps to develop their individuality and strengths.

(3) Constructivism theory

The core content of constructivism theory can be summarized as: student-centered, emphasizing students' active exploration of knowledge, active discovery and active construction of knowledge learned. The constructivist theory explains the learning: learning is the process of constructing in the representation of the mind. The learner does not move the knowledge from the outside into the memory, but builds on the existing experience based on the interaction with the outside world. The process of new knowledge, knowledge is not obtained through the teacher's teaching, but the learner uses the necessary learning materials (such as text and images) in the context of social context, with the help of other people (such as teachers and classmates). , physical, CAI, network and other media), through the construction of meaning to actively construct the nature, laws and internal relations between things. With regard to learning methods, constructivist theory not only emphasizes the cognitive subject role of learners, but also emphasizes the guiding role of teachers. It is believed that teachers are helpers and facilitators of meaning construction, not disseminators and indoctrins of knowledge. Students are the main body of information processing, active constructors of meaning rather than passive recipients of external stimuli and instilled objects. Learner-centered learning under the guidance of a teacher.

2.2. Feasibility Analysis of the Application of Multimedia Mode in the Teaching of College Physical Education Training

(1) Physical education requires strong demonstration

Most of the knowledge transfer of sports is movement technology. Teachers can teach in the form of words, language, pictures, audio and video, but most of them are static forms, and most of them are mainly to stimulate students' single senses, but through multimedia teaching demonstrations. Students have a variety of senses to receive stimulation; students are more likely to accept teaching content;

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teaching effect is good, easy for students to understand, remember, understand. According to the statistical analysis of educational psychologists, the information obtained by people through audio-visual accounts for 94% of the total amount of information, and 70% can be remembered after three days, far exceeding other modes of communication. Simultaneously mobilizing audiovisual functions in teaching can significantly improve students' learning efficiency and promote their motor skills. The whole process and the point of exertion of an action are presented to the students in turn through various means. The teacher can easily explain the technical essentials of each part of the action, demonstrate the whole process of the action, and then grasp the key parts of the action, highlight the key points, and difficulties. It broke the rigid structure of the classroom, effectively saved the time of the physical education class, reduced the phenomenon of repeated mistakes caused by repeated explanations, increased the practice time, and improved the teaching quality.

(2) The image of sports learning

Students have a strong memory of figurative things, and in their study, they often combine theory with their own physical practice. This way of thinking is very suitable for multimedia teaching. With the rich and colorful combination of multimedia, it uses its intuitive, image, Vivid, graphic and colorful, providing novelty, singularity, fun, and targeted textbooks to stimulate students' senses, attract students' attention, stimulate students' interest, and motivate students.

(3) The richness of physical education content

Physical education content includes theoretical courses and practical courses. Practice classes include track and field, ball, martial arts and more. The theoretical courses include school sports, sports introduction, exercise physiology, sports psychology, and sports technology theory. These contents are rich in pictures, texts, images and other materials, which provide sufficient material guarantee for multimedia teaching.

(4) Dynamics of sports theory

The connection between sports theory and sports practice is very close. In the teaching of sports theory, the explanation and explanation of the concept can be represented by specific actions, or it can be described graphically with a specific action. For example: Basic sports ability (ie walking, running, jumping, throwing, climbing and climbing) can be explained by some simple actions, and these examples can be dynamically displayed by computer to give students memories. The stimulation is more intense and the student's effect is improved.

(5) Socialization and richness of sports information

Nowadays, society has entered the information society, people pay more and more attention to human health, and people's demand for sports is very strong. Therefore, TV programs, audio and video, pictures, CDs, etc. for sports provide a lot of sports information for people, and also for sports multimedia. Teaching provides a wealth of materials, and with the development of technology, the improvement of audio-visual technology, the cost of burning audio-visual materials into optical discs is getting lower and lower, providing technical support and guarantee for the richness of sports multimedia teaching resources. To enable the development and design of personal multimedia courseware.

2.3. Characteristics of Multimedia Teaching

(1) Advantages of multimedia teaching

First, the combination of audiovisual and audio, and the use of form, image and sound to present teaching content, it is easier to attract students' attention and enable students to achieve the best learning results.

Second, the study time is extended from the classroom to the lesson. Students can learn something that is of interest or not fully understood in the classroom through the sharing of resources on the Internet.

Third, save time. The multimedia teaching courseware is mostly ppt, word, video, which are all made by the coaches in advance under the class, which saves the time of the class board and avoids the trouble of the wall chart. The rest of the time can tell the students more content, or leave the students with more self-study time to digest what they have learned, which is more full of classroom teaching.

Fourth, it is convenient to carry for long-term preservation. In the past, many teachers wrote a lot of

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lessons to be written on a special small blackboard, and then took them to class. I think this way is a bit too cumbersome. The content on the small blackboard is also easy to wear in the process of transportation, it is not easy to save for a long time, and the multimedia materials are all in the class, and most of the content is placed in the USB flash drive, which is easier to carry. And save.

(2) Disadvantages of multimedia teaching

Everything has two sides. We can't just consider the convenience that multimedia technology brings to teaching. We should also analyze the inadequacies and possible harms of multimedia teaching. From the end of the last century, multimedia technology has rapidly emerged and infiltrated into all walks of life, bringing tremendous changes to human production methods, lifestyles, working methods and learning styles. In recent years, with the emergence of multimedia technology in the education industry, its status has become increasingly important. Following the emergence of research results in multimedia-assisted teaching, the application of multimedia in teaching has become more and more mature, and more has laid the foundation for multimedia in education. The status of multimedia teaching software continues to develop, making the teaching process more convenient and faster, but it also caused many teachers to form a sense of dependence on multimedia, there is still a problem, excessive use of multimedia, students will not be multimedia Produce a sense of resistance, both aesthetic fatigue.

3. Experiment of Multimedia Mode in the Teaching of College Physical Education Development Training

3.1. Application of Multimedia Technology in the Teaching of College Physical Education

(1) Application of the screen

The traditional college sports development training teaching method needs to be displayed through some pictures, and the action is fixed. Under this teaching mode, students can only roughly understand the technical action essentials that need to be mastered in the college sports development training. In special training, some even need teachers to personally display. Although teachers are familiar with technology, it is inevitable that mistakes will occur during the exhibition process, which not only fails to achieve the expected teaching effect, but also produces students' learning. Great mistakes lead. After using multimedia technology, teachers can display the more successful college sports development training videos under the network, which greatly guarantees the correct normative guidance in teaching, and also promotes the quality of college sports development training in the classroom. The multimedia teaching application can make the graphics and animations displayed in the teaching, through the multimedia demonstration, the technical means of slow play, freeze, rotation, etc., plus the teacher's explanation of the action, can display the teaching content in multiple dimensions. In order to improve the teaching effect, for example, in the analysis of the various body movements of track and field athletes, multimedia technology can be used for slow play. In the case of technical movements that students cannot understand, the motion can be suspended in a fixed manner, by rotating, etc. The orientation shows the action to the students. Under the visual sense, the students will not have the phenomenon of seemingly incomprehensible, which will improve the teaching quality of the track and field.

(2) Teaching interaction

In the teaching of college sports development training, the use of multimedia teaching mode has strong interactivity. Through multimedia demonstration, teachers can conduct appropriate interactive communication according to the teaching courseware when conducting college sports development training and teaching, according to the actual college sports development. Explain the problems encountered in the training. Students can make timely records when making questions, and explain the professional knowledge through professional systems. Students can communicate with the multimedia system in a timely manner to enhance the interaction of students in learning and training. The teaching mode of entertainment color has a great promotion effect on attracting students to study hard. Students also greatly enhance the enthusiasm of training and learning when carrying out college sports development training, which in turn makes the teaching quality of college sports development training classroom. constant increase.

(3) Control simulation

The use of multimedia technology can enhance the simulation of college sports development

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training. The college sports development training movement is also a kind of sports that requires technology. The sports items it contains require a high level of technology. The traditional teaching methods are not normal. Showcasing these high-level technical movements, so using modern high-tech technology in modern teaching, the action can be fully presented, and the method of quick release or slow release can better guide students to train. The learning process is no longer a simple imitation, but learning by visual and auditory. Through slow playback, it can strengthen the weaker action essentials. Under the guidance of professional video files, the students' learning effect is very efficient. . For example, in the teaching and training of the small project of high jump, the traditional teaching is the teacher to explain the essentials of the action, the students need to understand and contact themselves, in the practice of over and over, find their own insufficiency, deepen the understanding of the teacher's explanation, this process It is very long, students need to understand the various essentials of their actions, and even deviations in the process of comprehension, which will bury hidden dangers for future training, students can not understand, resulting in low quality classroom teaching, students feel the boring classroom And boring, which in turn caused inattention in class, training did not have passion, which seriously affected the normal teaching progress. Using multimedia technology to convert the action essentials into video playback, students can receive correct action demonstrations before training, which greatly reduces the time for students to explore and leaves more time for training. The wrong action demonstrations are also displayed, and students can quickly master the visual impact, thus improving the classroom teaching efficiency.

(4) Quick display of materials

In the long-term teaching, especially in the process of technical guidance for college sports development training, students are not very accurate in mastering the basic action essentials. Although teachers have strong teaching experience, in the action display of actual personal teaching, The display effect is not very ideal. Through the high-tech use of multimedia, you can use the pigs on the network as well as the video during the demonstration of technology and motion. You can also use your own recorded video to display, students can review and consolidate through multimedia for a long time. In the past, relying on memory to carry out the action essentials of the conference teachers, this greatly guaranteed the accuracy and standardization of the track and field athletes in the training.

3.2. Multimedia Mode Setting of Teaching Experiments in College Sports Development Training Courses

(1) Subject

This paper selects 100 sophomores in the university sports major as the research object, because these students have a small difference in physical fitness and professional quality after the year of training, which provides effectiveness for the implementation of this study. The 100 students were divided into an experimental group and a control group in groups of 50. The situation of each group of students is shown in Table 1:

Table 1: Student group and control group student situation table

Group	Age range	Number of boys	Number of girls	Total people	Average score (before)
Test group	18.9--21.2	19	6	25	65.3
Control group	19.3--21.1	18	7	25	65.5

(2) Experimental time and arrangement

Experimental time: September 1, 2018 - December 31, 2018 (5 months).

Experimental arrangement: Two groups have two classes a week (basketball) and are taught by the same teacher.

3.3. Multimedia Courseware Production Example

The multimedia courseware system produced in this paper is shown in Fig. 1 and Fig. 2. This system can not only realize the video teaching as shown in Fig. 1, but also realize the picture teaching as shown in Fig. 2.

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Figure 1: Multimedia basketball video teaching

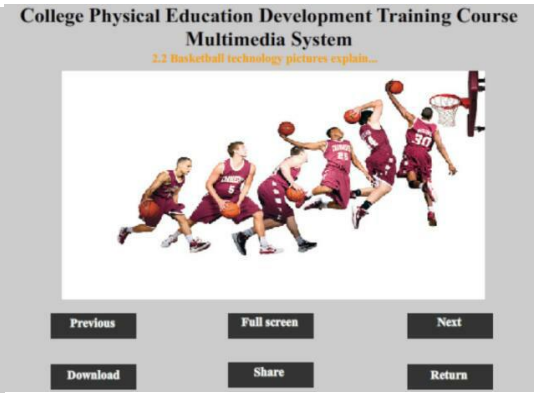

Figure 2: Multimedia basketball picture teachin

4. Analysis of Experimental Results of Multimedia Mode in the Teaching of College Physical Education Development Training

4.1. Comparative Analysis of Student Training Effectiveness and Efficiency

In this paper, after the experimental teaching and the control group of the two groups of students conducted multimedia teaching and traditional physical education teaching methods, in order to study and investigate the teaching method, the students' sports quality and athletic performance can be improved, and the experimental group and the control group are Students conduct basketball skills test, test content free throw line penalty 10 times, 1 minute fixed-point jumper, marching jumper. Test score statistics are shown in Table 2 and Figure 3:

Table 2: Basketball test results of experimental group and control group students

Test items	Control group (X±S)	Experimental group (X±S)
10 free throws	2.31±0.71	3.19±1.01
1 minute fixed point jumper	9.87±3.14	12.58±3.74
Jumper between marches	8.26±2.41	7.68±1.88

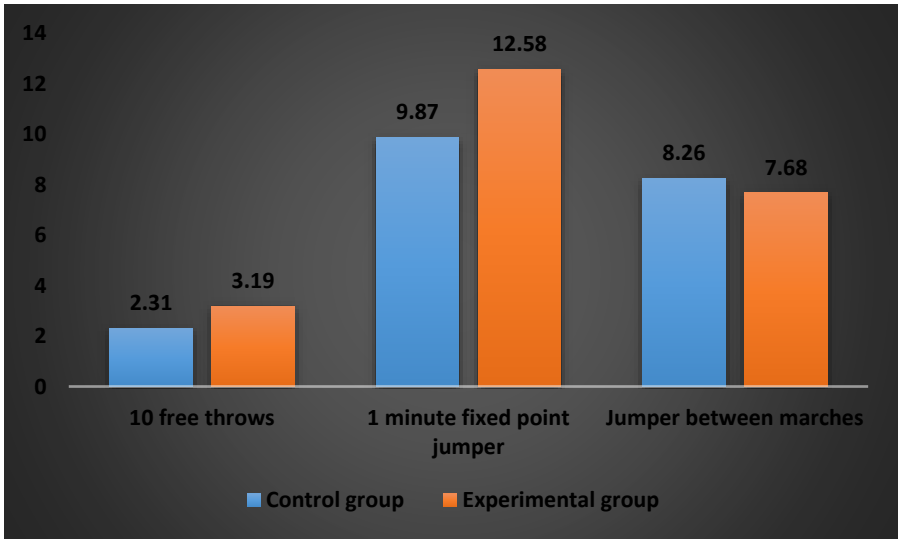

Figure 3: Comparison of basketball scores between experimental group and control group

The average value and standard deviation of the obtained T-test were obtained. From the results of mathematical statistics, the scores of the students in the experimental group were better than those in the control group, and the difference between the two groups was significant ($P<0.05$). Among the tested contents, the score of the one-minute spot-up jump shot was the most different among the two groups, with a significant difference ($P<0.01$). It can be seen that the application of the multimedia mode-based teaching method in the teaching of college physical education development training can enhance students' consolidation and strengthening of sports skills, improve teaching efficiency and

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quality, and bring greater results to students' motor skills. Improvement. After the teaching of multimedia teaching, students can significantly improve the sports development training technology. Through multimedia technology, such as video, audio, animation, and decomposition action pictures, students can better understand the sports development training techniques. The essentials are to make the sports development training techniques faster, better and more stable.

4.2. Student Satisfaction Analysis

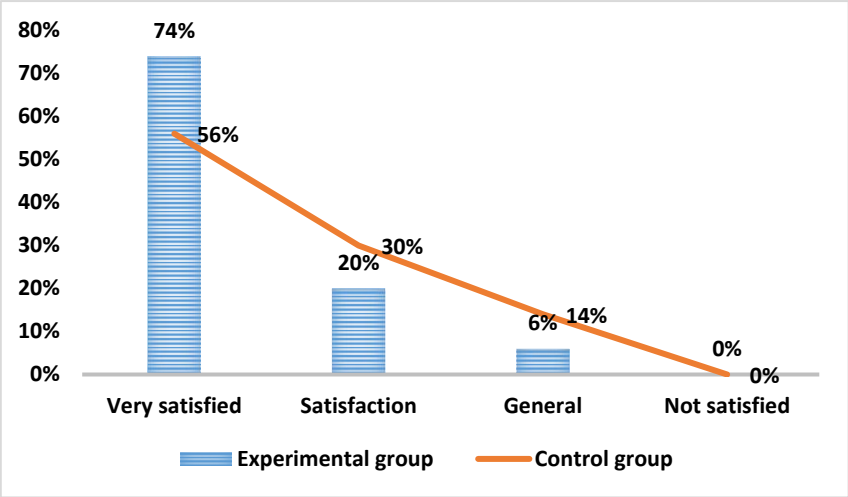

Figure 4 Student satisfaction analysis chart

After the end of the multimedia teaching experiment, in order to understand the effect and satisfaction of the experiment, the degree of student satisfaction was investigated. The results of the study show that the experimental group and the control group are satisfied with the multimedia model of the sports development training course. The proportion of people who are very satisfied and satisfied is 74% and 56% respectively. This shows that students have a positive attitude towards the application of multimedia mode in sports development training courses, which can help students improve their enthusiasm for learning, cultivate interest in learning, and improve sports development. The mastery of the training class and the speed of learning and the ability to analyze and analyze the sports development training, as shown in Figure 4.

5. Conclusions

(1) In view of the advantages and problems of multimedia technology in assisting college sports development training, this paper adheres to the spirit of student-oriented, fully considers the physical and mental characteristics of middle school students, and explores effective strategies to strengthen the application of multimedia technology in sports development training. Universities use the multimedia-assisted sports development training to provide reference.

(2) Although the application of multimedia technology to physical education has certain limitations, the advantage of multimedia technology in physical education is that it is difficult to achieve traditional physical education. It is better to apply multimedia technology to physical education. Realize the goal of physical education, promote students' interest in learning, and enhance students' enthusiasm for sports. Every physical education teacher should seriously carry out teaching exploration, so that multimedia technology can be better applied to physical education.

(3) The application of multimedia is the perfection of traditional physical education and training, which was born in response to the requirements of the times and the needs of teaching and training. Coaches should pay attention to strengthen communication and communication with students, respect the law of students' psychological development, and make courseware production adhere to people-oriented, use for others, give students full room for thinking, and stimulate students' imagination and innovation consciousness. At the same time, we must pay attention to innovation, innovative teaching and training models and teaching concepts, not to completely abandon it, but to eliminate obsolescence on its basis, integrate new vitality, better serve the teaching and training activities, and give play to the advantages of multimedia technology. To stimulate students' interest,

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motivate students and improve the quality of training.

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