

Study on the Application of Multimedia Network Teaching Platform in College Physical Education Teaching

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Abstract

As new information carrier, multimedia brings significant changes to people's daily work, study and life. In order to promote the development of modern education, multimedia network teaching platform has been widely used to realize the modernization and informationization of education. In this paper, we analyze the how multimedia network teaching platform will influence on physical education teaching. From the results of teaching experiment, students who using network multimedia aided teaching system get more scores than control group, this means that network multimedia aided teaching will help student to master the technical movements. From questionnaire results, the multimedia teaching system improve the students' learning interest, and will cultivate students' ability to discover problems and solve problems. In conclusion, the traditional teaching should be combined with the network multimedia aided teaching, so that to achieve better teaching effect.

Keywords: *Multimedia network teaching, Physical education, Learning efficiency, CAI, Technical knowledge*

1. Introduction

Sports teaching is based on teaching skills, teaching theory as a supplement, the full implementation of the practice of source in theory and is higher than the theoretical principles, the use of body language in the teaching, according to the characteristics and requirements of sports technique teaching, students must to the visual sensory system to create the appearance of movement characteristics, characteristics of the muscles feel consciousness to understand the characteristics of action essentials, the degree of muscle force and movement in space, time and other aspects [1]. In the traditional sports teaching, according to the summary of teachers and years of teaching experience, its characteristics is focus on bilateral teaching activity of teachers to impart knowledge and skills, teaching methods of program is relatively simple, various methods complement each other, constitute the to teach as the core of the teaching method system, the emphasis is the subject position of the teachers in the teaching process. Sports knowledge and skills teaching depends on the physical education teachers of explanation and demonstration. In this process, people know that, on the one hand, using body language and verbal language taught as the carrier of sports skills and theoretical knowledge is limited. Limb model with instantaneous characteristics, in order to achieve the goal of teaching, teachers must be repeated explanation and demonstration, students can only rely on the short time observed information, formed between the cerebral cortex of the corresponding motor neurons of the central memory traces to motor skill practice. On the one hand, the impact of sports teachers because of age, sports injuries, teaching mood and other factors, there will be action [2]. Specification and timeliness of demonstration of the phenomenon of

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lower, In addition to the traditional sports teaching, teaching and explaining the teaching mode of almost the whole class, become the only practical fixed mode. The development of teaching is not student ability as the main target and focus, mainly in motor skills needed in the exam. The desalination of the cultivation of students' ability, the practical ability of students, independent observation ability, psychological quality, emotion will effect is not very obvious.

Computer assisted instruction, referred to as CAI, is a new teaching method using computer aided teaching [3]. It on the computer as a medium, through the interaction between computer and students to achieve the teaching, the aided teaching has in the college teaching system get widely used, it computer multimedia technology into the teaching of physical education, a certain role in support of the traditional sports teaching. I tried to through to Sports Education Professional Volleyball Teaching as a case study, computer multimedia technology into sports teaching, the construction of multimedia teaching platform, so as to enable students more active, three-dimensional, comprehensive master the technique movements to help students understand the content of teaching, to improve students' ability of autonomous learning. With the rapid development of multimedia technology, the computer has become more and more people elbow partner, become a mentor to many people. As a new human information communication carrier, multimedia is to people's daily work, study and life bring increasingly significant changes.

In order to promote the rapid development of modern education, meet the demand of modern education, information needs, the College of physical education of colleges and universities sports education specialized volleyball course is a combination of theory and practice of curriculum, its technical structure is more complex, covers a relatively large amount of information, this course is often to physical activity as the main means to teach theoretical knowledge and skills, especially pay attention to learn and practice middle school[4]. As a result, relying on conventional teaching methods has certain limitations. In the aspect of teaching, not every action part of volleyball techniques are accurate, clear, timely demonstration to the students. Such as volleyball spiking, the teacher in the demonstration spiking skill of volleyball cannot be spiking technique in the air the complete action demonstration to students, only in situ do some demonstration, such as swing arm, ball, force package So in order to make the students master the complete technical action, training student self observation ability, practical ability and found the problem, analyze problems, problem-solving ability, enhance the communication between teachers and students, and realize the diversification of teaching methods, derived from the new method in volleyball teaching. In recent years, with the development of multimedia network technology unceasing development and the teaching conditions continue to improve, computer the modern tools in the field of teaching has been popular, this new type of modern teaching mode, computer assisted instruction (CAI) also in the field of sports is becoming more and more widely used. Thus to explore the application of modern information technology in sports teaching has become a hot topic in the education field.

2. Literature Review

2.1. Multimedia Teaching Concept

The media is often referred to as the media; people are often seen in daily life and work and use vocabulary. As people often think of newspapers, mobile phones and the Internet, news agencies, television, radio and other news media; newspaper by means of written communication, broadcast by the volume of the sound, tone, and tone color can show the color of individual character of broadcast news; Internet image transmitted in the form of information; television images, sounds, text and other forms to transmit information. With the help of information media, the media is the mediator between people's communication

and exchange of ideas[5]. The media has two meanings, one is carrying the information of objects, two is the storage and transmission of information entities, such as text, voice, and image, sound, animation, video and other media are. Multimedia technology is referred to as the multimedia computer technology, is a kind of information processing technology, that is to text, audio, video, graphics, animation, *etc.* many kinds of media information with the computer of comprehensive treatment such as: the collection, acquisition, compression, editing, storage, again to the performance of the single or synthetic forms of integration technology. Therefore, the essence of the multimedia technology is a process and provides text, graph, and sound, like a variety of computer information system. The source of the word multimedia complex, diverse and media, from different angles has different descriptions of multimedia. Understood literally, multimedia is by a single media compound and into, however, it is often with the computer closely related, so the multimedia is a combination of various forms of information in text, graphics, video, voice, music or data, by computer processing and integration is now. It can be used to reach any media resource in the dissemination of information. Multimedia has broad and narrow sense: sense, refers to the transmission of text, voice, graphics, animation and other types of information means, or carrier. The narrow sense refers to combination of interactive information exchange and dissemination of more than two kinds of means of communication, or carrier media[6-7].

Multimedia teaching is refers to in the teaching process, according to the characteristics of the teaching target and the teaching object, reasonable selection and use of modern teaching media, and with the traditional way of teaching the combination and design, implementation and evaluation process of education system. It is through the form and sound use of media, software, the whole process control teaching, is a multimedia computer as the core, picture, text, sound, like a full range of information in one of the intelligent teaching. In other words, is the teaching content in human associative way, multiple media information integrated and displayed on the screen, so that the learners through the interface to complete a series of interactive operation for learning.

2.2. Multimedia Courseware Development

Media CAI courseware making as the object of study, using the method of literature, expert interviews, questionnaire survey method and software development method such as research methods, through the planning analysis, collecting material, interface and interaction design produced a set of suitable for teachers' teaching and students' self-study multimedia CAI courseware, and put forward the some problems that should be paid attention to in the process of making courseware[8]. The results show that the CAI multimedia courseware is a complicated teaching program, teaching content, courseware more complex structure, involving many aspects of the compatibility between software and media material and conversion. At the same time, the survey results show that the application of the courseware can improve the students' learning interest and enthusiasm of independent, technical knowledge and improve has a positive role in promoting learning efficiency.

Multimedia network courseware is to make multimedia website as a basis for the use of a variety of modern media, such as image, video, network music, animation and so on, using a variety of software programming code and create for learners on the Internet for information resource sharing network platform. This topic using network technology and computer software, developed a set of teaching, training, practice, discussion, troubleshooting in the integration of multimedia network courseware, hope to develop full functional, interactive performance is good, can solve the problems of the teenagers' physical training, after the Sports Multimedia Courseware Research and development provide certain reference and help[9]. Gymnastic multimedia CAI Courseware in a certain extent reduced the repeating work of teachers, to achieve the goal of teaching, teachers,

students and space equipment teaching elements of natural selection and the optimal combination, reflecting the educational thought of optimization of teaching process, fully develop the teaching of human resources, the gymnastic multimedia CAI Courseware for teaching, to improve teaching effect and improve the students' interest in sports, improve the teaching efficiency and the level of knowledge and accelerate the update speed of knowledge and improve the quality of physical education teachers has important practical significance.

In tennis teaching as the research object, with the multimedia teaching means, from the education theory, cognitive theory of discusses the theoretical basis of the multimedia CAI teaching design, and to develop the tennis teaching multimedia CAI courseware. The courseware has two characteristics: one is the autonomy, second is interactive. Based on the tennis teaching multimedia courseware of network it has its unique role, first of all, it can make the inside and outside of the class to achieve integration, to solve the theoretical knowledge in the teaching practice of teaching time is tight and not comprehensive problems[10]. Secondly, it can make students autonomous learning on the network according to the different needs of their own; finally, the multimedia to vivid, concrete and vivid demonstration of the technology action essentials, the rhythm can let students according to their own on different knowledge master frame repeat observe and learn, so as to achieve the effect of auxiliary teaching. Describes the sports multimedia CAI courseware development environment, development system and multimedia teaching service system, rely on its own technological strength and creative practice of independent development of Sports Multimedia CAI courseware.

3. The Impact of Multimedia CAI Technology in Sports Teaching

3.1. CAI multimedia Technology

CAI multimedia technology into the course of physical education has a positive effect on improving teaching effect. It can provide students with a new, independent space. In this new environment and fully meet the different requirements of students, and improve students' desire for knowledge and make students more focus, thus improve students' learning efficiency[11]. In the sports classroom teaching introducing multimedia technology, in sports teaching to fully mobilize the enthusiasm of the teachers and students factors play a positive role, courseware making simple, and the use of its advantages to create good teaching environment and stimulate the students' interest. Through the use of multimedia technology in physical progress and the application of the multimedia in the sports teaching, not only can produce lively and vivid effect and according to the learner's ability, step by step to arrange for his own learning curriculum, change the traditional teachers to teach, one-way teaching way in students' learning, a learning mode of two-way communication. It can make students more with self nature, to enable students to have highly personalized features. Through the research of modern education techniques and its application in the teaching of physical education, analyzes the status quo and Countermeasures of modern educational technology applied in physical education teaching, aims to speed up physical teaching modernization, promote the sports information, and constantly improve the quality of teaching, and on the above problems, put forward some suggestions on PE Teachers' computer level[12]. Also should pay attention to continuing education, physical education teachers for the modern educational technology and computer skills training, and strive to improve the PE Teachers' level of modern educational technology and computer application ability, the need to ensure that the process of sports teaching modernization, promote the application and development of modern educational technology in the teaching of physical education, provide a reference basis for the reform of physical education.

Through the analysis of multimedia technology, multimedia technology referenced to sports teaching, explore the significance of multimedia technology in the teaching of physical education, analysis of the multimedia technology in the teaching of physical education in the presence of some restricting factors, while recognizing that multimedia is the transmission of information through road, is a technical means, is teaching the local factors. Should not completely deny the role of traditional classroom teaching, we should give full play to its unique cultural and emotional advantage, focus on the optimization design of teaching, seeking the best combination of the traditional classroom teaching and network teaching, high quality and efficient cultivation of talent requirements of the times[13]. Computer assisted instruction can effectively stimulate students' interest, to attract the attention of students, so that students have a strong desire to learn, to cultivate students' active learning thought. As the physical education teachers in Colleges and universities, should adapt to the modern teaching methods as soon as possible to change, combine the traditional sports teaching method and multimedia computer network, and effectively carry out teaching activities.

3.2. Multimedia Courseware of Physical Education

On the basis of multimedia technology, pay attention to the feedback of the content, timing, and frequency and to explore its effectiveness in volleyball teaching, intended to improve the volleyball teaching methods, improve the quality of teaching, providing a new idea and theory basis. Experimental study mainly adopts literature data method, questionnaire survey method, mathematical statistics method and experimental teaching method, before the experiment developed new teaching schedule increase video feedback means, and through the experiments to verify the teaching effect. Through the investigation and analysis, video feedback teaching method in improving students' skill and indeed master degree play a certain role, to improve the quality of teaching. It gives full play to the advantages of modern multimedia technology, advanced means, method is novel, fully mobilize students learning enthusiasm, to make up for the deficiency of the traditional teaching method, in line with the needs of the times and social development. In the organization, under the guidance of teachers, mainly cultivate students' ability of observation, analysis and problem solving. Video feedback teaching methods to activate and enlarge the other routine teaching method have good teaching effect. It can be for the whole or a phase of the implementation of the teaching process control can also be used for a class, a specific technical movement teaching, and has strong practicability. The learning goal setting, feedback information and feedback to fine personal help after the measures in place to help promote the feedback.

That the study of multimedia courseware on the teaching of physical education produced some positive effects, improved the quality of teaching and improving the students' interest in learning, active participation provides greater space for teaching subject analysis to sum up, the development of multimedia courseware and multimedia technology in the sports teaching application of progress, and so on. The above research is mainly manufacture and application of multimedia courseware in teaching, through contrast experiment and multimedia courseware making combination of very little, having two parts, respectively is experimental study of multimedia technology in compulsory course experiments, multimedia technology in basketball technology course.

4. Empirical Analysis

The purpose of this study is using the advantages of multimedia technology in the teaching of physical education, students' autonomous learning platform; through contrast

experiment teaching and evaluation of spiking skill of students to grasp the degree of that of Volleyball Course in application effect of multimedia assisted teaching were analyzed. Give full play to the potential of multimedia assisted teaching, using multimedia technology combined with flexible and diverse forms of organization of teaching, scientific, intuitive, vivid and interesting of PE teaching to mobilize students' learning interest, to stimulate the enthusiasm of students, improve students' autonomous learning ability, promote the comprehensive development of students' Volleyball technical and tactical level. Through the discussion of the design and the making method of the multimedia teaching system of volleyball technology, on the demand and feasibility of the network multimedia teaching system for validation sample, scientifically and rationally for analysis before and after the teaching effect. To explore a respite, fewer hours of communication between teachers and students lack of new teaching mode in the traditional teaching mode. Through research and practice, to promote the network multimedia system aided volleyball teaching, teaching and research related to the future and to provide some reference.

4.1. Validity Test

According to the needs, access to the school sports teaching theory, scientific research method of sports, multimedia teaching, network teaching, based on standard web page design and production, sports multimedia courseware making, volleyball teaching and training and other aspects of the books and the obtained data were classified and sorted. At the same time, collected a large number of volleyball of all materials, and watch a lot of sports teaching courseware, lay the theoretical foundation for this research design and analysis. According to the aim and content of this thesis, in accordance with the requirements of the scientific research method of sports questionnaire design, design two sets of questionnaires, in order to ensure that the questionnaires is effective, designed questionnaire to 10 volleyball teachers consultation, and validity of the questionnaire were assessed. Evaluation using is very appropriate, suitable, in general, is not suitable, unsuitable five rating, followed by assignment to 5 points, 4 points, 3 points, 2 points, 1 points, according to the experts on the validity of evaluation results, construct and content validity of the questionnaire of the inspection. Experts of the basic situation and the validity of the test results are shown in table 1, table 2 and table 3.

Table 1. Basic information Specialists

Expert member	Associate professor	professor	total
frequency	8	2	10%
percentage	80	20	100%

Table 2. Validity Test of the Questionnaire One (N=10)

rating	5	4	3	2	1	results
Structure evaluation	2	7	1	0	0	83%
Content evaluation	1	7	1	0	0	80%

Table 3. Validity Test of the Questionnaire Two (N=10)

rating	5	4	3	2	1	results
Structure evaluation	2	7	1	0	0	81%
Content evaluation	2	7	1	0	0	81%

4.2. Data Statistics and Inspection

The purpose is through the network multi-media volleyball teaching system using comparative experiment research, experimental data and they were data analysis, verify the network multimedia teaching of volleyball system theory and technique of volleyball learning auxiliary teaching effect more into the further verify the student autonomous learning ability raise. To the university sports institute sports education professional volleyball course as the experimental object, volleyball course students were randomly divided into two groups, 30 cases in each group, a group of as the experimental group, a group as the control group. The control group and the experimental group were taught by the same teacher, teaching factors site, content, teaching progress in both experimental group and control group is the same. The control group and the experimental group students have been in the normal state of teaching learning, don't let the know oneself is the control object and the object, to avoid students know themselves as experimental objects produced a certain degree of psychological hint, thus affecting the test scores. The test results of special physical quality index differences are as follows:

Table 4. Statistics Cross Step Test Scores

group	The number	GPA	Max Score	The lowest score
control group	30	11.9	12.3	11.5
experience group	30	11.8	12.1	11.4

Table 5. The Run-up Height Test Statistics

group	The number	GPA	Max Score	The lowest score
control group	30	3.09	3.15	3.02
experience group	30	3.11	3.14	3.07

Table 6. Two Group Score Comparison Experiment

project	group	average value	standard deviation	average number	T	P
3 meters run-up	control group	11.9	0.159	0.1	0.115	>0.05
	experience group	11.8	0.236			
sargent jump move	control group	3.09	0.039	0.01	0.037	>0.05
	experience group	3.08	0.046			

After the teaching experiment, at the end of the semester, to test the two groups of Students Volleyball theoretical knowledge, theoretical knowledge of volleyball test and test questions multiple-choice and fill in the blank in the total score is 100 points. The test results are shown in Table 7 the results from the statistical data, the results can be seen, the theoretical knowledge of the students in the experimental group mastery was significantly higher than the control group. You can think of multimedia network assisted teaching system plays a significant role in promoting the students to master learning volleyball theoretical knowledge.

Table 7. Volleyball Technology Theory Knowledge Test Scores

Group		Above 90	90-80	80-70	70-60	Below 60
Experience group	Number(30)	7	10	12	1	0

	percentage	22	33	40	5	0
Control group	Number (30)	6	6	11	5	2
	percentage	20	20	34	17	9

For a more comprehensive understanding of network multimedia teaching system assisted teaching effect, in the form of questionnaire survey, understanding of students in the experimental group of network multimedia aided teaching system is applied to spiking skill of Volleyball in the evaluation.

Table 8. Students' Assessment of Multimedia Assisted Teaching

Code	content	satisfied		commonly		dissatisfied	
		No.	Pro.	No.	Pro.	No.	Pro.
1	use of network multimedia teaching is useful	18	90	2	10	0	0
2	helps to develop your interest	19	95	1	5	0	0
3	Improve your learning enthusiasm	20	100	0	0	0	0
4	speed up your skills	18	90	2	10	0	0
5	strengthen the communication	18	90	2	10	0	0
6	Deepen the understanding	19	95	1	5	0	0
7	improve your ability of self-study	19	95	1	5	0	0

5. Conclusions

The design of network multimedia teaching system has a certain value, it has greatly enriched the volleyball teaching resources, improve the quality of volleyball teaching, and by students. From the point of view of comparative teaching experiment results and in volleyball course by using network multimedia aided teaching system, students in the experimental group of technical standards and technical evaluation scores were significantly higher than those in the control group. This shows that the use of network multimedia aided teaching system is of great help to the students master the technical movements, but also has a good effect on Volleyball teaching. Through the analysis of the questionnaire results, multimedia aided teaching system give students of great interest, English learning interest and stimulate students learning emotion, establish active learning tendency; helps to improve the students' learning enthusiasm, cultivate students found the problem, the analysis problem, problem-solving ability. According to the questionnaire data, network multimedia aided teaching system enhanced the interaction between the teachers and students, the students felt that multimedia aided teaching system is interaction between teachers and students, students and students of a good platform, has a strong human-computer interaction.

Network multimedia aided teaching system without time limitation, to provide students with a good self-learning platform, it can at any time to meet students' learning needs, abundant learning resources, so that students can quickly grasp the technical movement, comprehend action essentials, broaden their horizons and thinking. Teachers according to their prior to make good teaching plan, Download instructional video and pictures of the technical action and in class according to the student's actual action shooting video, according to the teaching plan sequentially uploaded to multimedia system, for students to browse, and timely and elite athletes standard technical movements are compared and analyzed. Finally, the teacher according to the students to master degree, delete and modify the teaching contents at any time. Volleyball teaching video is mainly of technical action in the volleyball teaching video, volleyball technique in slow motion replay every correct decomposition of motion video, students in the class their technical action, so volleyball teaching video is mainly technical action in the volleyball teaching video,

volleyball technique in slow motion playback. Each correct decomposition action video, students in the class their technical action, this can enable the student to carry on the comparison of good, find their own wrong movements and correct.

The proper application of network multimedia network multimedia system is a pre programmed fixed program good, for learners at any time, cannot make accurate timely treatment. Therefore, the use of multimedia network system in the choice, students must play a advantages of multimedia network teaching system in teaching according to specific teaching objectives, teaching content, avoid the shortcomings, proper application of multimedia systems. The network multimedia teaching and traditional teaching is not completely overturned, but to inherit its advantage, and improve the use of modern educational technology. To teachers, classroom based teaching mode have played a dominant role in traditional teaching, is the classic and effective teaching mode. The network multimedia teaching to break the teaching mode of the limit of time and space, let more students in different locations, different time to participate in learning activities. So the traditional teaching should be combined with the network multimedia aided teaching, so as to learn more comprehensive knowledge of volleyball, achieve a better teaching effect. College should encourage teachers and students in terms of network multimedia technology production innovation, to give economic support and vigorously promote the development of the University's teaching and learning environment of the network multimedia technology has a unique advantage, we should make full use of this advantage, to encourage teachers and students to accelerate the development of the professional field of multimedia teaching system, to complete the outstanding teaching courseware has been developed to accelerate the popularization and application. But in the making of multimedia courseware, software programming, to buy space and domain name, and need to a lot of money, for students, there is no ability to pay the money, so the school should give some help and support.

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