

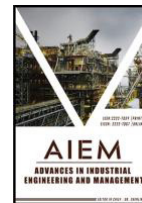


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RESEARCH ARTICLE

THE APPLICATION OF COMPUTER SIMULATION TECHNOLOGY IN COLLEGE PHYSICAL EDUCATION TEACHING

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ABSTRACT

The teaching method of using computer simulation technology to simulate the real situation not only enables students to enter the virtual scene, but also improves the interest in learning and athletic ability, which is a new teaching method. Computer simulation technology can simulate the function of teachers and students' own activities, bring sports teaching and students into the virtual space, and provide a brand new experience for sports teaching in colleges and universities.

KEYWORDS

Computer, Simulation Technology, University Physical Education Teaching, Application

1. INTRODUCTION

With the rapid development of modern science and technology, many university cultural courses and professional courses have set up computer simulation courses, and many courses adopt interactive multimedia teaching system. Traditional education methods and today's college students' strong thirst for new knowledge does not adapt, make them think that physical education is a burden, and physical education teachers think they are not enough attention to physical education, intense exercise and college students' physical lack of science, lack of more reasonable, more novel teaching methods. The education concept of colleges and universities is also undergoing great changes with the rapid development of the times and the rapid change of science and technology, and physical education teaching should be reformed accordingly. Therefore, in order to enhance students' physical fitness and students' interest in physical education, it is necessary to reform and innovate the traditional physical education teaching methods and establish more scientific and reasonable teaching methods (Yan and Sun 2008).

2. OVERVIEW OF COMPUTER SIMULATION TECHNOLOGY

The so-called "computer simulation technology", is the combination of computer technology and mathematical modeling principles and related tools, to build a simulation model of the simulation system. From the specific types of computer-related equipment, the existing computer simulation technology can be divided into three categories: simulation simulation, digital simulation and hybrid simulation. In practice, the three different simulation techniques all have unique characteristics, and can achieve the desired effect to a certain extent. In the current application, it can well solve the shortcomings of the traditional

simulation technology, with high accuracy, fast operation speed and good reliability of the test results. The main relationship of the three elements is shown in the figure.

3. COMPUTER SIMULATION TECHNOLOGY THE IMPORTANCE OF PHYSICAL EDUCATION TEACHING

With the rapid development of modern science and technology, computer simulation technology, as an emerging technology, has been widely used in agriculture, industry and other industries, making a great contribution to China's economic construction. In all majors and cultural courses, there are courses, and many courses use interactive visual multimedia teaching.

In physical education teaching, teachers' teaching skills, students' learning enthusiasm, learning effect, teaching venues, teaching equipment and other factors all occupy a large proportion. Therefore, how to correctly understand the students' learning characteristics, the strength of physical quality and adaptability is the key to physical education teaching. College students are the main body of college physical education teaching, how to systematically understand and train it, to its scientific understanding and training, it is particularly important. Traditional physical education classes (as shown in Table 1) take PE teachers as the main body, and students are passive. Teachers often use the "indoctrination style" way to complete their homework. After a PE class, if the students only feel that the physical and mental destruction, no practical harvest, then, the quality of the classroom is difficult to reflect. As a result, many teachers will focus on the interpretation of movement skills and knowledge understanding. In such an overall environment, we must constantly improve this teaching method, and seek new ways to improve its teaching quality.

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Table 1: Comparison between traditional PE teaching and simulation technology

	Emulation technique	Traditional classroom
Way	Teach	Teaching and learning
Point of penetration	How to teach?	How to teach and learn?
Degree of difficulty	Centre	Big
Time	Short	Long
Content	Few	More
Teaching object	Participants and virtual students	Student

The “football manager”, “like” live football “,” like “FIFA”, “like” NBA “-like competitive games are all a simulation of football games and training, allowing participants to experience their fighting skills and will to fight. Can cheer for the audience in the simulation, blood boiling, immersive. For those who like sports and sports games, although they are not qualified to participate in real sports competitions, they can also operate virtual players and conduct virtual competitions in the competitions to personally experience the fun of sports and experience the real scene of sports. Moreover, due to the high viewing value of competitive games, many people will choose sports games to meet their leisure and physical needs (Wang 2014).

After the students learn the physical education courses, the teachers can introduce the students into the actual training, and use the computer simulation system to simulate some scenarios. Test students, such as badminton, table tennis, rugby, basketball, volleyball, tennis and other sports, they can establish a virtual arena through the computer simulation system to feel the field atmosphere in daily teaching and training, which can promote students’ interest in learning, experience the exciting arena, and conduct daily simulation practice. Through the computer simulation, the students can have a better understanding of the formation mechanism of the movement process and skills. The simulation system can also provide accurate feedback for the students’ physical fitness. If a student is injured in the physical education class and needs to know the information of the injured part, the computer simulation system can also simulate the injured part according to the simulation signal of the system; let the student and the teacher know whether the specific injury can continue the race.

4. MAIN APPLICATION PROCESS OF COMPUTER SIMULATION TECHNOLOGY

A. for the implementation of the problem elaboration. From the perspective of teaching, it analyzes the specific application of computer simulation in teaching activities, and expounds its characteristics and functions. Secondly, combined with the purpose, requirements and practical needs of teaching and research, the research and determination of the scale characteristics and restriction conditions of computer simulation technology are comprehensively studied.

B. actively construct primitive mathematical models. Mathematical mode refers to the approximation of mathematical structure by using normative and normative mathematical language (Gao 2013). Summarize it out. Computer simulation technology is an innovative technology based on the modeling technology. Its modeling quality and accuracy directly affect the accuracy of the simulation technology, and it will have a great impact on the future practice, which must be taken seriously to ensure the quality of the model.

C. the mathematical model of the simulation system is actually constructed. Based on the original mathematical model, the computer technology module design, and in the process; constantly improve and correct the deficiencies found, so as to further improve the quality of the mathematical model.

D. enter the programming and debugging stage. According to the established mathematical model, the specific computer program design, and on this basis, the effect of the program for specific debugging. The deficiencies found in each link should be corrected and gradually improved.

E. to implement the specific practice of the simulation experiment. In this process, the simulation experiments are conducted through the computer simulation technology, as well as the set goals, plans, and steps, and the results of the experiments are accurately recorded down.

F. carefully verify the experimental results. Through a large number of serious simulation tests, according to the test results obtained, to verify the established model, and the problems and defects found in the process. The simulation model was modified to achieve the expected construction purpose and achieve good test results.

5. COMPUTER SIMULATION TECHNOLOGY IS USED IN PE TEACHING AND LEARNING

A. Physical education teaching

Wushu routine Unique martial arts movements, can be said to be the bright pearl of the traditional Chinese culture, pay attention to the unity

1	Implementation on the problem	Analyze the specific application, elaborate the characteristics and functions, combined with the purpose, requirements and practical needs of teaching and research
2	Actively construct primitive mathematical models	Active construction of the original mathematical model to ensure the quality of the model
3	Mathematical model of the practical construction of the simulation system	Based on the original mathematical model, the deficiencies found are corrected
4	Enter the programming and debugging stage	According to the established mathematical model, the shortcomings found in each link
5	Implement the concrete practice to the simulation experiment	The simulation experiments were performed by computer simulation techniques and the results will be recorded accurately
6	Careful verification of the experimental results	Meet the intended construction purpose according to the test results obtained

of body, Hands, eyes, body, step in one. Wushu routine is a special sport, it must have a certain speed, strength, can maintain the balance of the body, in order to achieve the "internal and external repair". At present, colleges and universities across the country have basically set up martial arts routine courses, and the explanation of routine martial arts routine only pays attention to the explanation of routine and teachers. However, given the age of the teachers, the fact that their technical skills still need to be strengthened, and the gradual deterioration of their physical conditions, they often find it difficult to demonstrate suitable demonstrations during the teaching process, and therefore, multiple practice sessions by the students and continuous guidance and feedback from the teachers are usually required to ensure that the movements are presented accurately. The use of such teaching methods may not only make students feel monotonous and uninteresting, but may also weaken their creativity and enthusiasm for learning, which in turn may have a negative impact on the classroom teaching and learning outcomes. It is very important to use the simulation technology in physical education. We can assist the classroom learning by making simulation software. Through the analysis and research of physical education teaching content in physical education teaching, it lays a foundation for guiding teachers to formulate scientific and efficient physical education teaching strategies.

1) Auxiliary demonstration

The use of computer simulation technology for practical training, can not only improve the students' interest in learning, but also can very well solve the instantaneous nature of the technical action. The influence of other problems on teaching demonstration. At the same time, the quality of teachers' demonstration movements is restricted by teachers' professional ability, age and other factors. In addition, the use of computer simulation software, can also make the classroom teaching more realistic, increase the classroom interest and appeal. At the same time, the computer simulation courseware is used to demonstrate the complexity (Chen et al. 2013). Difficult action, improve the effectiveness of classroom teaching

2) On the training ground

We will according to the martial arts routine related process, in the start, middle and termination turning stage, install a sensor under the carpet, these sensors are connected with the computer, can be set to each sensor time and stay time, each sensor reaction will be displayed on the computer, students can demonstrate after practice. Have what unreasonable time, can correct in time. If it is in the training time, the athletes have any mistakes, will be recorded in time, so that the students can find the mistakes in time. For example, when practicing Taijiquan, beginners tend to move too fast. To master this technology quickly, it must be effectively controlled to achieve better results. When the subject touches a certain point (bright potential), the computer displays a series of red lights on the timer, and then the subject stops. At a pre-set timing, the green light started and the subjects continued to operate, controlling the pace and timing of the entire game through a series of red and green light controls.

3) Simulation exercises

Build a virtual role, build a virtual environment. Martial arts routines

are rich in content and complicated, using simulation technology to enable the teacher to simulate an opponent. Through 3D, simulation technology, students can clearly see the opponent's tactics, tactics and their own strength.

B. Sports training

Simulation technology is a high-tech subject with a wide range of application prospects. It can simulate and practice important phenomena and important scenarios in certain important systems. In physical education teaching, we should use information technology to establish a relatively complete mathematical model, so that the athletes can achieve a better competitive state. More specifically, the mathematical modelling of the system simulation begins when the mathematical model conversion is completed and to some extent adopts the technical means of the computer. Through the complex manipulation and processing of the system, we are able to analyse and validate the relevant data in depth. Ensuring the accuracy of the data and technology can provide us with scientific and accurate guidelines in the field of simulation technology, which is very useful for promoting the progress of physical education. (Ailati 2021).

6. CONCLUSION

In short, although simulation and simulation technology is a new science and technology, and it is still in the early stage, it can more fully realize multiple forms of education, more in line with human multi-channel learning mechanism; it can greatly improve its learning effect. Therefore, the application of simulation technology to modern physical education teaching and training will have a great space for development and great value.

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