Sports——Analysis on the Application of Computer Virtual Reality Technology in College Sports Training

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Abstract. This paper not only analyzes the application feature and necessity through the practical application program of computer virtual reality technique in domestic universities and colleges, but also explains the important significance of this advanced technology to college sports training through a mass of survey data. It indicates that this technique is practical and effective in college sports training, which can perfect the results and quality of college sports training, perfect the physical quality of students, enhance the attractiveness of sports to students and facilitate the healthy and sustainable development of college sports [1].

Keywords: The Computer, Physical Training, Virtual Reality Technique, Colleges and Universities Sports Teaching, Sports Teaching Application Research

1. Introduction

Computer virtual reality technique is a immersive, interactive and sense of awareness of the basic characteristics of computer advanced man-machine interface, is developed rapidly in recent years, a comprehensive computer interactive technology. It combines computer graphics, simulation technology, multimedia technology, etc., to simulate the sensory functions of people, so that the experience can be immersed in the generated virtual environment, and build an information space [2].

Thus, this technology has a great deal of scientific and technological content, it has been applied to many areas in life, 20 the field of sports education also has its existence. According to the data survey, a large number of college students lack physical exercise, which is not only because of the great academic pressure, but also because of the boring teaching method of physical training, which is less attractive to students. Therefore, the computer virtual reality technique was applied to sports training is urgently needed, not only can change the present situation of the students’ physical training, but also can provide a large number of concrete can be intuitive for sports education career application data, provide reference for the development of the sports education career after, enhance the sustainable development
of physical education, model more available talent for the undertakings of physical culture and sports.

2. The characteristics of computer virtual technique

![Figure 1. Classification of features](image)

2.1. Perceptual

Through the simulation environment of high-tech computer virtual reality technology, perception ability, including vision, hearing and touch.

2.2. Immersed sex

Computer virtual reality technology can bring people immersive experience through high-tech simulation environment, highly restore the realistic environment that needs to be simulated, and well connect the virtual world with the real world [3].

2.3. Interaction

By connecting the virtual world and real world, E. The experience and the interaction between the virtual environment to a certain extent. Experiencers get into the situation by feeling the response of the virtual environment. thus gaining a sense of reality.

3. The significance of computer virtual reality technology in athletic training

![Figure 2. Classification of necessity](image)
3.1. Avoid damage caused by difficult actions

Due to the development of undertakings of physical culture and sports, including the technical difficulty is also more and more big, indicates that in the future will have more students to be hurt because of the high difficulty action of sports training. Bringing computer virtual technology into the classroom will effectively reduce the injury caused by students' training [4]. Through height reduction of the virtual reality environment, the student be able to complete the difficult moves under the condition of safety training.

3.2. Avoid unexpected events

Some very strong antagonism sports, like judo and boxing, often when training is unable to avoid some damage accident, 20 the teaching of many colleges and universities have to abandon the items. If you can bring computer virtual technology into classroom teaching, so will significantly reduce the risk of accidents [5]. In the virtual reality environment, on the other hand, students can invest so put down the psychological burden of courses, and the virtual characters to fight, you don't have to worry about the accidental injuries due to fight. Because of computer problems, a virtual teaching environment also can carry on the examination evaluation to the training of the student movement, to student's action guide, complete the effective combination of teaching and training.

3.3. Improvement of material conditions

In the practical training environment, in order to satisfy the material conditions that are required on sports training, many colleges and universities need to purchase a large number of sports equipment, planning training venues and a large number of protective measures [6]. Therefore, considering the amount of money and space, the development of sports training is restricted, even be canceled. The application of puter virtual technology will change this situation very well. Students can train in the context of being created, which can availably reduce the funding and field investment of physical training, as well as the later maintenance costs.

4. Lication and exploration of computer virtual reality technology in college sports training

The application of computer virtual reality technique has changed the former model of simple demonstration and oral transmission of experience in physical education, and developed into the present comprehensive, diversified and specialized teaching model [7]. The combination of computer virtual reality technique and college athletic training can fully mobilize the enthusiasm and autonomy of students' athletic training and effectively improve the level and efficiency of College physical Education.

4.1. Using computer virtual reality technology to make teaching courseware

Computer virtual reality technique in the application of teaching courseware, to perfect the integration of sports training and modern science and technology, to promote the college physical training activities. The technique to the students to create a realistic and vivid teaching environment, enable students to multi-dimensional manner to understand the details of the training actions [8]. On the other hand, the teacher can through This high-tech technology to make the teaching file, forming a database that includes all aspects of teaching content, to help students develop a healthy sports habits.
4.2. Remote teaching tasks by using computer virtual reality technology

As a kind of new teaching methods, the combination of computer technology and network technology, the remote teaching is feasible. Such technique can help teachers to break the localization of space and the practice, To make the students complete the sports action learning at the same time, Ability to interact with other classmates and teachers to interact [9].

4.3. Use virtual reality technology to share teaching experience

Before this teaching experience sharing carrier are newspapers, and the computer virtual reality technique in addition to being able to provide images, text information, also can pass the three-dimensional images to express the teaching experience of the content.

5. The feasibility analysis of applying virtual reality technique in college physical Education teaching

5.1. It can break the time and space limitation of physical education

Computer virtual reality technique enables college athletic training to get rid of the limitations of time, weather, field and other conditions, and can better meet the needs of athletic training. By simulating the real sports scene, the technology enables students to immerse themselves in the virtual environment, understand various movements and flexible moves, enhance their interest in sports training, and improve the effectiveness of learning sports technical movements. For some dangerous sports, such as boxing, sanda, taekwondo, the technology can effectively avoid confrontation scene injury accident.

5.2. It can innovate the way of physical education and improve the effect of physical education

Computer virtual reality technique can enrich the content of athletic training, make sports actions more intuitive and vivid through the virtual environment, arouse students' resonance, and help cultivate students' innovative thinking. In the process of sports practice, can clearly capture, record the students' action, check whether the action of the student accurately, and give corresponding guidance and evaluation, and help teachers understand students' learning situation in time, to student's study data, the learning process, such as monitoring and analysis, in order to develop personalized learning solutions for students.

5.3. The teaching function of this technology has strong exploitability

Relevant technical departments can strengthen the development and research of the virtual reality program and content in physical education, so that the technology can be better applied in physical education teaching in universities and colleges. Meanwhile, colleges and universities can combine students' use of virtual reality technique and its teaching effect.

To improve the content and functions of the virtual reality teaching system, such as interactive functions, 3D realistic design, etc.

6. Based on VR sports simulation system

VR sports simulation system is through virtual reality technology, simulation training competitive sports
projects. Through this high-tech training mode, coaches and students can constantly innovate training tasks, get the best training effect, and ensure the physical health of athletes. In addition, the application of system simulation can expands unceasingly, improve the accelerating of virtual reality technology. So, in the use of virtual reality technology in the process of sports training market potential is tremendous, and the application prospect is very optimistic. The characteristic of the virtual reality technology includes: the output form diversification, can handle a variety of input devices, complex behavior modeling, real-time interaction and collision detection, and other functions. In the training of competitive sports, the coaches and far mobilization by virtual reality skills to conduct effective simulation training, and expand the interaction process. Athletes in VR sports simulation system with the help of will continue to enhance its scientific training level and comprehensive strength.

7. Conclusion

Computer virtual technology along with the progress of technology and science and continuous improvement and improvement of people's recognition of the computer virtual reality technique has prompted the technology in People's Daily life has been much used in universities and colleges sports training [10], more research data shows that many unfavorable factors are greatly reduced with the application of the computer virtual reality technology Through the analysis of this phenomenon, we can intuitively, The application of this high-tech technology in sports training this decision is very correct, can make more challenging the difficulty in the sports action and confrontational sports into the classroom in university, also for teachers and students to bring unprecedented experience of science and technology [11], greatly promote the spread of sports education, and facilitate the healthy and sustainable development of the undertakings of physical culture and sports. Therefore, The application of computer virtual reality technology in sports training which has epoch-making significance is very necessary.

References

[1] Shi Ruifang. Analysis of Computer Virtual Reality technology and its Application in College Teaching [J]. China management informatization,2017,20(18):223-224.

[2] Wei Youshuang. Virtual Reality and Simulation [M]. Beijing: National Defense Industry Press, 2004.

[3] An Chaachin. Image analysis Technology and Kinematic Parameters of Excellent Players [J]. Sports Science, 1993 (5) :58-60.

[4] Feng Luhong. Rational Application of audio-visual means in Physical Education [J]. Sports, 2011 (8) :65-66.

[5] Zhang Weidong, Meng Fanhui, Bai Haijun, etc. Journal of Heilongjiang Bayi Agricultural University, 2012, 24 (4) :88-91(in Chinese).

[6] Wang Jianhui, Yang Jun, Sun Lixin. Research on the Application of computer "virtual Reality" technology in College Sports Training [J]. Journal of North China Institute of Aerospace Technology, 2012(2):56-59.
[7] Journal of Henan Institute of Education (Natural Science Edition), 2003, (12):63-64.

[8] Zhao Dandan. Application of virtualization technology in Computer Information Technology [J]. Science and Technology Communication, 2020(04):95-96.

[9] Yan Yi. Application of Computer virtualization technology in the field of Teaching in Radio and Television University [J]. Information and Computers, 2019(06):234-235.

[10] Xu Xiaowei, Fu Xiaoxuan, Application of virtualization technology in computer System [J]. Information and Computers (Theoretical), 2020(01):10-11.

[11] Liu Liping. The Practical Application of virtualization technology in computer Information Technology [J]. Information and computers (theoretical edition), 2019,31(22):10-11.