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

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Abstract. Under the background of the overall improvement of the current social development level, the advantages of computer technology in education work are also more significant. In particular, the computer technology based on multimedia technology plays an important role in improving the quality of education. It is not much to say that the emergence of computer virtual technology not only brings new means for college physical education, but also effectively improves the teaching level. However, there are still many problems in the process of technology application. This paper carries out a detailed study on the application of computer virtual reality technology in college sports training.

Keywords: Colleges and Universities, Physical Training, Computer Virtual Reality Technology

With the development of modern science and technology, the advantages of computer technology in various industries are more significant. Among them, the application effect in college physical education is more significant. However, it is far-reaching restricted by traditional teaching ideas and means. Many colleges and universities in the process of sports training can not realize the reasonable application of computer virtual reality technology, which seriously affects and limits the development of sports training teaching quality and efficiency. Based on this, this paper will study the application of computer virtual reality technology in college sports training. I hope this article can provide effective guidance for physical education in Colleges and universities.

1. The main problems of physical training in Colleges and Universities

At present, more training items and less physical education courses are the most significant characteristics of college sports training. This also makes the traditional teaching methods and ideas have been unable to effectively meet the basic requirements of society for college sports. In addition, traditional teaching methods pay more attention to students' physical education level, and do not realize the important influence of comprehensive quality on students. The training method is too single, which leads to the students' interest in learning is difficult to improve[1]. There are often perfunctory problems in college physical education. In addition, teachers' neglect of management has, to some extent, contributed to this unhealthy learning atmosphere. In this state for a long time, it is difficult to
effectively improve the comprehensive quality of students. At the same time, some colleges and universities have not formulated a unified sports standard. Teachers blindly increase scores to take care of students' learning emotions. In this vicious circle, the physical training in Colleges and universities will inevitably have problems. The application of computer virtual technology in college sports training can improve students' participation. Students in the virtual environment can better training experience, at the same time, the emergence of a variety of new things can also achieve the promotion of students' interest in learning. This will also promote the improvement and development of sports training quality to a large extent. In addition, virtual technology also has the important function of information collection. Through this technology, teachers can also analyze and deal with students' examination results. It has an important impact on the objectivity and accuracy of performance audit.(see figure 1)

![Figure 1. Balanced diet](image)

2. Application of computer virtual technology in college physical training

In our thinking about how to apply computer virtual technology and how to better apply it in sports training, we should study how to integrate this technology into it. We can study the problems in the following aspects.

2.1. Virtual technology and sports technology action virtual and real contrast

Through the optimization and improvement of a certain technical action of students, the standardization of technical action is realized. This simulation system can not only effectively analyze the training work of athletes, but also master the problems in technical movements. In this way, teachers can improve and perfect the technical action in the guidance process. Therefore, in the process of college sports training, the application of virtual reality technology is very necessary. In the process of applying this technology, teachers should also actively learn the advantages of technology. In order to master the use of computer virtual technology at the same time, a comprehensive grasp of students' Sports literacy requirements, to achieve targeted guidance for students. Through the action decomposition of computer technology, students can have a more comprehensive and systematic grasp of the prescribed movements before training (see figure 2).
2.2. Using virtual reality technology for action virtual comparison
Under the background of the development of sensor technology, its advantages are more and more significant. However, we should also realize that although sensor technology has been significantly developed, there are still some problems in the practical application process. Therefore, in order to analyze the details of sports movements, it is difficult to complete this requirement simply relying on the comparison of virtual technology and real action. Therefore, with the help of computer virtual technology on the computer standard action, analysis of students' action, to ensure that through the comparison of virtual and virtual better find the difference\(^3\). Using computer virtual reality technology to carry out comparative analysis can not only help students realize the comprehensive cognition of technical movements, but also help students to accurately understand their own actions, and make clear the distance between their own training and standard movements. On this basis, we can adjust the direction of teacher training and optimize the training efficiency and work quality.

2.3. Remote interactive training with virtual display technology
The courses of physical training in Colleges are mostly traditional sports events, rarely involving advanced sports training. However, the interactive advantage of virtual reality technology can effectively improve the level of school training and reasonably increase love training subjects. Therefore, in the new background, students can also use virtual reality technology to communicate in different places.

2.4. Application classification of computer virtual reality technology in College Physical Education Training
One is immersion. Trainers need to use three-dimensional helmets, stereo glasses, stereo surround sound headphones and other equipment to experience a more realistic three-dimensional environment. The disadvantages are very obvious, that is, complete equipment requirements, high cost, complex operation. The other is non immersion. Usually, trainers only need to create a plane virtual environment for learning, such as making training videos.

3. Application strategy of computer technology in college sports training

3.1. Creating virtual training situation
Although any form of sports has a set of systematic training rules, the situations encountered in training are still changeable, and students' understanding and acceptance of knowledge are different. This will lead to the effect of teachers' oral explanation greatly reduced. It can not only show the training situation intuitively for students, save material investment, make up for the shortage of realistic conditions, but also try to send teaching videos to students in advance. On the premise of not affecting the training effect, we should encourage students to study by themselves and cultivate their ability to train and study independently.
3.2. Collect and measure the motion data
The Olympic spirit of "higher, faster and stronger" fully expresses the significance of sports. Therefore, the collection and calculation of motion data is very important. In many projects, motion data is the key measure of sports effect to a great extent. Compared with using traditional tools to collect and measure the motion data, using computer virtual reality technology to collect and measure the motion data is faster, more accurate and more comprehensive\(^4\). It is worth noting that the use of traditional collection tools can only collect students' external data, but not psychological data. For a long time, teachers can only grasp the psychological status of students according to their own observation, and the data obtained is not accurate, and will vary greatly due to different teachers' level and experience. Using intelligent instruments and other equipment in computer virtual reality technology, we can not only easily collect accurate psychological data, but also scientifically and quickly analyze these data.

3.3. Course playback and analysis of training effect
Different students need different time to accept the same knowledge, and sports training is no exception. However, physical training is different from the study of general cultural courses. You can check the notes outside the class and even master the knowledge by self-study. However, the demonstration of sports training is strong. It is unrealistic to require teachers to demonstrate repeatedly after class if they want to learn again. At the same time, it can help students to complete more difficult training tasks. The athletes who participated in the skiing events of the 16th French Winter Olympic Games in the United States used virtual reality technology to train in the dark training classroom. This not only saves a lot of money and time, but also can train more fully and the training effect is excellent\(^5\). As a course, physical training requires students to achieve certain training effect. How to accurately analyze the training situation of students is very important. Using computer technology, we can not only quantify the students' movement, but also show the movement effect, such as movement speed, position movement, etc. Through the analysis of sports effect, students can more directly grasp their training weaknesses, technical blind spots and shortcomings. Teachers can also understand the training situation of students more systematically, so as to adjust training strategies and achieve training objectives\(^6\).

4. Conclusion
The article shows that the long-term development and in-depth innovation of sports training in China cannot do without the support of high technology such as computers. To better apply and promote computer virtual reality technology in college sports training, we still need unremitting exploration and innovation.

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