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The application of computer virtual reality technology in college physical training ecological environment.

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Abstract

Based on these, the ecological environment of college physical training based on computer virtual technology was studied in this paper. Based on the brief introduction of the related theories and technologies, the virtual reality technology, the physical training environment, the virtual scene construction technology and the real-time 3D computer graphics technology were emphatically introduced. The ecological environment of physical training in colleges and universities was discussed, and some methods of computer virtual reality technology were also analyzed. The results show that the application of computer virtual reality technology in college physical training ecology can avoid the danger that may arise in the teaching of physical education and can improve the pertinence of physical education teaching.

Keywords: Computer technology, Virtual reality technology, College sports, Ecological environment.

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Introduction

Zhang and Han has pointed out that virtual human motion control is an important field of virtual reality, and has introduced the related concepts and the development of the model and its application in physical education [1]. Ren and Li has pointed out that in order to strengthen the practicality of physical education, we should reflect on the modernization of effective physical education and physical education [2,3].

State of the Art

Different studies pointed out that in order to provide strong backup force, it is necessary to combine virtual reality technology with college physical training. In this way, the level of physical education in colleges and universities will be raised to a new height. Wang and Yang have pointed out that in order to provide convenience for the reserve talents of competitive sports in China, virtual reality technology can be combined with physical training in colleges and universities, thus to improve the training quality and the technical level of college athletes [4]. Meng has also pointed out that the practical application of virtual reality technology provides a new teaching method for college physical education, which improves the level and efficiency of physical education teaching in colleges and universities [5].

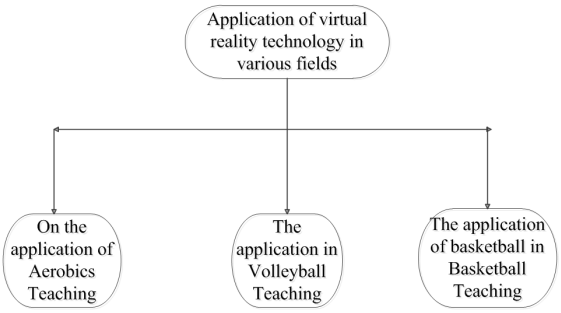

Figure 1. *The application of virtual reality technology in various fields of sports.*

As shown in Figure 1, virtual reality technology is widely used in the field of sports. Shuang has pointed out the wide application of virtual reality technology in physical education teaching and training, and has introduced the main features of virtual reality and its application in sports training [6]. Various studies have pointed out the new idea of physical education modernization, and created a new model of physical education, and has analyzed the shortcomings of physical education teaching. The importance of virtual reality technology is illustrated from the aspects of innovation and improvement of teaching quality.

Methodology

Virtual scene construction technology

The construction technology of virtual scene has a direct impact on the construction of ecological environment of physical training, which can improve the safety of the ecological environment [7]. The electronic training scene simulation system, which is the virtual modeling and development system, has been introduced into the sports training, which is not limited by time and space [8]. At the same time, it can effectively stimulate the interest and initiative of the students. As shown in Figure 2, the physical training environment should be constructed.

Figure 2. *Ecological environment of physical training in colleges and universities.*

Real time 3D computer graphics technology

One of the key technologies of virtual reality is the 3D computer graphics technology. It is the most important technology to construct the ecological environment of physical training, and it is the primary technical support. Corresponding studies have introduced the theory of virtual reality and three-dimensional animation technology, and has conducted a study. In the real world, the use of three-dimensional technology is based on virtual reality technology and three-dimensional animation technology, and the two are based on the development of three-dimensional graphics.

In the scene, the corresponding images of any point $F(x,y,z)$ are $P_1(x_i,y_r)$ and $P_r(x_r,y_r)$, the following formula can be used:

$$parallax\ d = \chi l - \chi r = (L \cdot f)/z \rightarrow (1)$$

$$then \begin{cases} \chi l = \chi r + d = \chi r + (L \cdot f)/z \\ yl = yr \end{cases} \rightarrow (2)$$

In the case of parallax is known, the formula (2) is used, with both rapidity and reliability.

Result Analysis and Discussion

Through the use of virtual reality technology, the advantages of physical training in the ecological environment can be optimized in advance, thus to avoid some of the devastating risk. The virtual reality technology has the characteristics of comprehensive and scientific, which can improve the safety and the overall quality of the ecological environment.

The virtual reality technology is used to analyse the construction process, taking University of Science & Technology China as an example. In foreign countries, there are start-up enterprises, and then there are large companies to join. In the application of virtual reality technology, our university should also take this approach by cooperating with related companies, so as to promote the development of the technology and accelerate the modernization of curriculum. Our country's cost is relatively low, and so the product pricing is also low. Product development cycle is short, there is certain homogeneity, and innovation is not enough. Products can be interactive in general, and more than half of the products do not support external operation, which is not conducive to promotion. But the hardware requirements are low, so more levels of the crowd can be met. The construction cost of sports ecological environment is not very high, which can meet the problem of the shortage of funds in colleges and universities.

Conclusions

With the advent of the Internet era, computer technology has been widely used. In order to speed up the transformation of teaching modernization and improve the effect of physical training in colleges and universities, the application of computer virtual reality technology in college physical training ecological environment is of great significance. In the process of the research on the computer virtual reality technology of the physical training ecological environment in colleges and universities, the computer virtual reality technology, such as virtual scene construction technology and real-time 3D computer graphics technology, were analyzed in detail. It is found that the application of computer virtual reality technology in the college physical training ecological environment can simulate the real environment more comprehensively and avoid the danger, fully embodying the suitability of the technology. To sum up, it is better to use computer virtual reality technology in college physical training ecological environment. Therefore, in the construction of ecological environment of physical training, operators can consider the use of computer virtual reality technology, so as to comprehensively analyze the physical training of the actual ecological environment, avoid mistakes, and save the construction time.

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