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The study of the influence of sports teaching mode with virtual reality technology for education quality

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ABSTRACT

The virtual reality technology brings a series of significant change, which appeared more and more. As one of the key technology of the future development of the Internet application in the field of sports teaching, it will subvert the traditional physical education thinking and unidirectional sports teaching model for physical education. In the paper, through firstly research the overview of virtual reality technology and secondly apply the cognitive theory of the situation analysis of the virtual reality technology in the sports teaching and finally put forward the construction of the model sports teaching mode improving the teaching quality and optimize the teaching means to provide more scientific and systematic theoretical reference.

KEYWORDS

Virtual reality technology; In sports teaching mode; Situated cognition theory virtual reality technology; In sports teaching mode; Situated cognition theory.



INTRODUCTION

As the intermediary between the sports teaching theory and practice of mutual transformation, Sports teaching mode plays an important role in the sports teaching. In recent years, the application of China's sports teaching mode is influenced by the rapid development of modern educational technology. The traditional teaching mode will gradually be replaced by the new teaching mode of interactive visualization, which is stronger on the school sports teaching ideas of physical education teaching mode^[1-5]. Therefore, the school must adopt modern science and technology reform of sports actively^[6-9]. The teaching mode innovation can solve the difficult problems in teaching and virtual reality technology is one of the important means.

Virtual reality technology is used to simulate the real world activities with the help of some interactive equipment. User is closed to the natural way to interact with the virtual environment between the participant and the virtual environment in order to establish an interactive relationship between the real-time productions. It is similar with the real environment in the sensory experience. As a new physical education technology, virtual reality technology can shorten the training time and achieve intuitive effect. Also, it can foster students' self training consciousness and innovative ability in the teaching reform. Thus, physical education plays an important role in it^[10-14]. So how to make good use of virtual reality technology to build a new sports teaching model is based on virtual reality technology. Also, it enables students become faster, more stable, and more intuitive. Learning sports knowledge and skills will become the new trend of the development of methods of physical education reform in the future.

VIRTUAL REALITY TECHNOLOGY

In the simulation of virtual teaching environment science, virtual reality technology needs a corresponding technical support. Analysis of real virtual reality is to realize the virtual reality from the angle of PE teaching. The virtual object is the digital space of real world multidimensional information mapping to the computer to generate a virtual space accordingly. It mainly includes the realization of virtual reality beyond the 3D model construction model driven technology of stereo visual tracking and view synthesis induction objects as the physical space. Also, time for user operation in virtual environment can be key technical limitations of these techniques.

3D graphics modeling technology. It is the basis for creating virtual reality. It will generate some object of the real world in 3D space in the corresponding reconstruction according to the system requirements. For modeling of virtual reality system, different mapping physical will be attributed and virtual reality should be different. For example, the virtual sports on site requirements will vary with the meteorological data, such as various weather conditions, such as cloudy, rainy day and night and so on.

Model driven technology. Usually, the model driven software is a software development kit, which will provides access to 3D model of the interface in order to realize the 3D model through interface calling. The load remove rotation amplification will control the force detection terrain. This virtual scene was in control of all kinds of input data and transfers all kinds of information to the user in real time operation.

Stereo synthetic technology. It is a basic technique to provide realistic auditory user experience, such as the attenuation of sound in different distance, direction and sound position changes, which will cause users to binaural feel the effect not same.

Visual tracking and viewpoint induction technology. From the use's video camera to an X-Y plane array, position and orientation are calculated by tracking the object in the image plane in different time and different position of the projection by using ambient light or by tracking the light emitted by the light source. The visual tracking implementation must consider the tradeoff between accuracy and operating range. The viewpoint combining induction must use a variety of positioning method to determine the user in a moment of line of sight and display. With common eye positioning helmet mounted, the viewpoint induction method will display remote viewing technology and sensing technology based on the eye.

The reality of virtual object is that the thing and the effect of virtual space in computer generated back to the real world. Reality of virtual object will let the user's perception in virtual space and realistic

stimulation produced equivalent in the real world. Efficient computer information processing technology mainly includes the data conversion technology, data processing in space technology of voice technology, data compression and database technology.

THE MEANING OF THE USE OF VIRTUAL REALITY TECHNOLOGY IN THE TEACHING OF PHYSICAL

The application of virtual reality technology in physical education is a leap in sports education development. Education theory of virtual reality technology will realize the human face of users and the virtual environment, which are two aspects of one whole interconnected. It will create a new way of learning autonomous that is learning environment from the traditional learning transform to the mode of interaction. Student information and environment will grasp by themselves in order to get the knowledge and skills of the 3 sports teaching. Virtual reality technology has the meaning of the following aspects.

In line with modern technology education concept. Virtual reality can meet the education of humanism ideal. The creation of virtual environment provides a new platform for the generation of sports teaching mode and provides an ideal stage for the integration of a variety of sports theory. The virtual environmental stimuli and feedback have a strong impact to their internal needs and motivation, which can produce a strong sense of satisfaction. This will enable students to obtain a variety of perceptual and rational understanding of objective things, which will help stimulate students' thinking in images and creative thinking so as to deepen the concept construction and creative new ideas.

Improve the teaching environment. The using virtual reality technology can make the change process become ideal unfold in time and space, which can enlarge and reduce the natural events and accelerate or delay the students. The natural event could use the equipment site into the classroom, and bring it into the virtual environment to observe and study the real experience of various motor skills. This can help those which remain within doors and autonomous decision technical and tactical plan feel the real operation.

Improve the efficiency of teaching. Teachers can create the corresponding teaching scene environment quickly according to the teaching demand. Various characters and other teaching materials resources will act. The real environment is so clearly that more students have chance to zero distance multi angle of virtual practice. Thus, students will grasp the concept from the simple impression memory into a combination of visual memory and word memory, which will help correct understanding and mastering the students. Students can simulate training repeatedly and greatly improve the efficiency of teaching practice alone.

Optimization of the sports teaching process. The comprehensive application of virtual reality in multimedia and modern network education technology can optimize teaching process. The traditional sports teaching mode can not achieve the teaching method in middle school students. The virtual reality system can achieve a variety of hypothesis model and the virtual reality system is directly observed by the hypothesis, which generated the result or effect, and also can carry out the real virtual world sports star coaches to create a personal learning environment to enable students learn the development of heuristic teaching in natural or friendly atmosphere.

Create a new modern sports teaching mode. The virtual reality technology changes the traditional sports teaching process. Teachers teach the knowledge into the teaching guidance and organizers students changing from passive receivers of knowledge as the main exploration of knowledge discovery. The teaching media transformed into cognitive tool by teachers teaching means. Students listen to the creation of situational teaching m and carry out some exploration and discussion, which have some construction of meaning

VIRTUAL TEACHING AND SITUATED COGNITION

Virtual reality technology can obtain nearly true feelings problems through a virtual environment so as to solve the problem of lacking of teaching resources and teaching means. Also, it can use climate environment for students' sports equipment model and various virtual computer to generated different thing.

One of its advantages is the interaction system with feedback device information. These inputs can achieve the interaction between students and the environment. Thus, the effect of variable one-way teaching can be used in interactive teaching. Providing that the supporting theory make up the limitation of the traditional teaching mode by analyzing the effective design and development of virtual reality technology, it can be applied in the sports teaching to the virtual teaching by using the theory of situated cognition. Knowledge is situated as an interactive state in the interactive process of individual and in the environment. The activities or the development of the theory can help improve the teaching method, which can be seen in Figure 1.

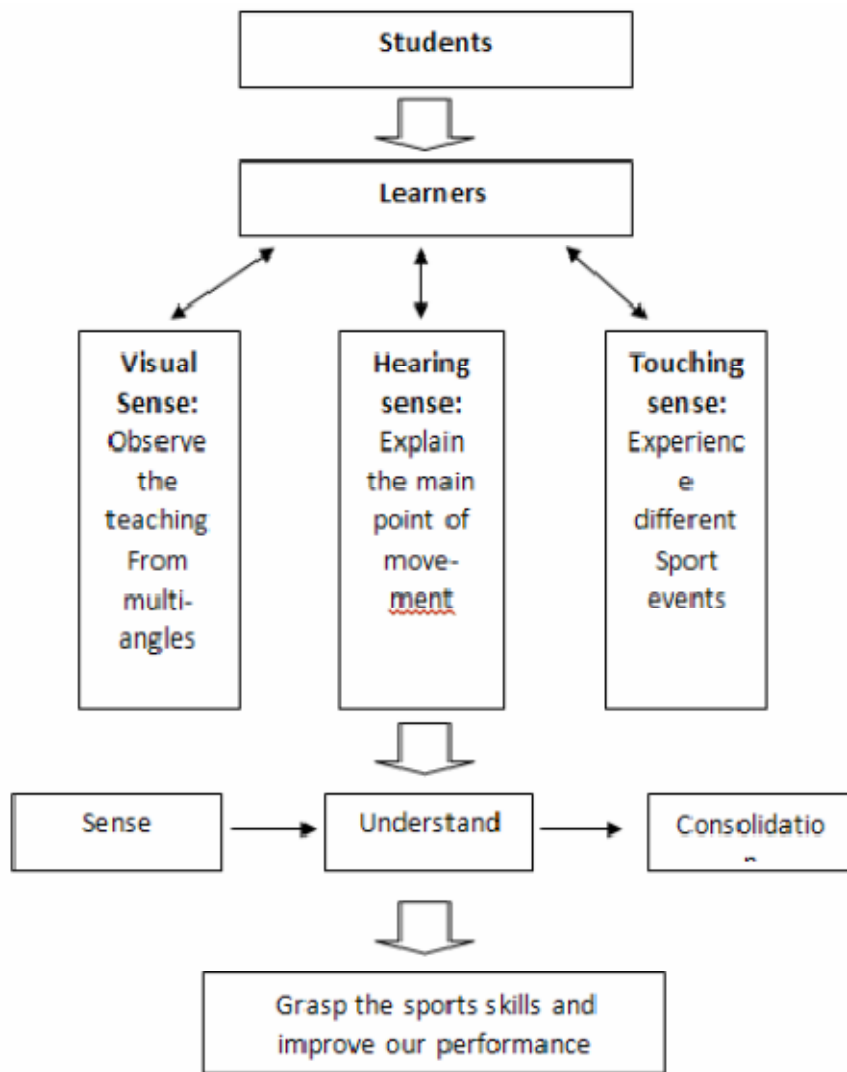


Figure 1 : Virtual learning environment

It is used to provide students the participation and interaction situation in order to promote students through learning and related activities in the context of constructing. The knowledge meaning also will be transmitted so as to form an open and independent teaching mode.

The application of virtual reality technology in the sports teaching is essentially using the technology to build a virtual learning environment. Students have an interactive access to the real experience, which will become an effective learning behavior through the visual operation environment. Compared with students' interaction with the virtual environment, it is actually a process of practice on information. The simple memory and the learning situation can help construct and organize knowledge so as to promote the study and understanding.

In the virtual learning environment, students can be integrated into the learning environment by role-play. In this way, they can understand and experience all kinds of sports. Thus, sports skills of

emotional experience and practice will be enhanced. Sports interest in the process of learning will improve students' learning initiative. Cognitive theory emphasizes the importance of knowledge and action, which are interactive in virtual environment of middle school students through visual and auditory tactile and other sensory. In this way, it can complete the interaction such as multi angle observation of teaching content, discussed technical points of action, which can experience different sports and bring the true feelings so as to achieve the teaching means diversification.

SPORTS TEACHING MODE BASED ON VIRTUAL REALITY TECHNOLOGY

Teaching model of physical education plays a very important role in the theory of sports teaching. How to apply virtual reality technology to construct a new teaching model of physical education plays an important part. And it is a new development direction of physical education teaching in our country.

Based on the structure design of teaching process, Virtual reality technology sports teaching mode is the basis for the construction of emotional and cognitive laws of sports and learning. The emphasis is that the students' autonomous learning mode and the emotional body of the mode is the traditional sports teaching.

The development of virtual reality technology in sports teaching mode can promote students' individuality in the teaching and guide the students physical education practice gradually and lifelong.

In the process of teaching, it enables the students to fully experience in motor learning fun. Students develop habits of interest in learning to meet the needs of individuals. The teaching methods is based on subjectivity teaching concept, which can provide individualized and personalized teaching methods, which can be seen in Figure 2:

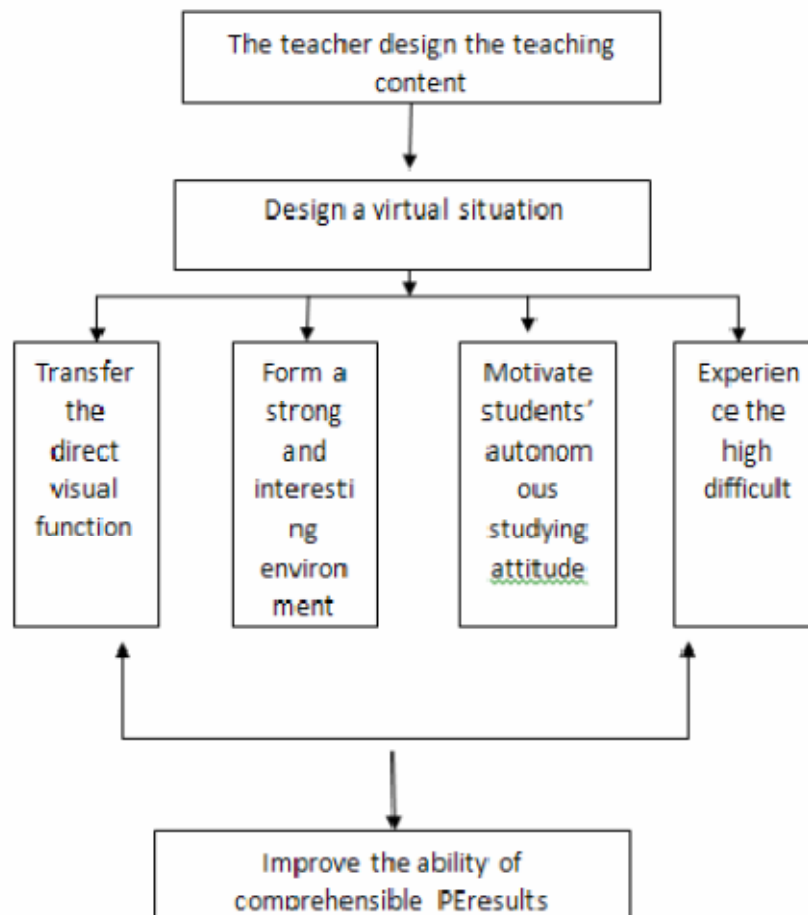


Figure 2 : The structure of teaching process of virtual reality teaching model of physical education

PROBLEMS

Virtual device aristocratic. Virtual reality has the ordinary sense for external equipment, which is expensive in both high resolution stereo projection and display a space helmet locator or fiber optic data gloves. These things are costly and its basic costs around \$70000. The powerful equipment and its costs need to increase in general education and its unit may step back to the funding problems seriously, which restrict the virtual reality technology in the field of education.

Hardware equipment should be extended. The processing speed of the equipment need exists. The center computer is not convenient to use because these effect is poor and difficult to achieve. The virtual reality requirement is insufficient to meet the enormous amount of data in the virtual world of real-time processing. Talking about the data storage capacity, it is insufficient which based on old factory sense of taste of equipment is not mature and commercialization.

The effect of virtual reality remains to be strengthened. Virtual reality focuses on the geometric representation, which lack virtual reality technology in physical behavior model. The realistic perception of authenticity and real-time problem of its virtual effect needs to be further strengthened. We cannot completely take the place of practice teaching.

CONCLUSION

New future with the new chapter in the development of virtual reality technology in the teaching content teaching means teaching mode will change the traditional teaching mode of physical education teaching mode to the new teaching content and practice of virtual reality combined with the development of virtual reality technology will compose the application of creative talents to create the development of education.

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