The Application of Virtual Reality Technology in Campus

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ABSTRACT
Virtual reality technology is very critical in the current development of China’s computer industry. Under the premise of the rapid development of information technology, this technology is vigorously promoted and widely used in the campus, has become an inevitable trend. This paper mainly analyzes the application of virtual reality technology in campus from the perspective of modern information technology.

Keywords: information technology, on-going of time, virtual reality technology, campus application.

INTRODUCTION
With the rapid development of information technology, China's campus currently promote virtual reality technology on the basis of digital information and internet, and under the strong support of computer technology, network platform and other modern technology. The purpose of this is to realize the effective collection, analysis, processing, integration, storage, transmission and application of campus information [1], so as to effectively improve the utilization rate of campus digital resources and promote the further optimization of information resources. The flexible application of the virtual reality technology in the campus can help improve the level of digital education.

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THE RELATIVE RESEARCH OF VIRTUAL REALITY TECHNOLOGY

The Concept and Features of Virtual Reality Technology

Virtual reality technology mainly refers to the use of modern technology such as information network technology, computer technology, at the same time from the sense of smell, hearing, visual and other aspects, in order to obtain a full range of simulation environment [2]. The flexible application of this technology in the campus, can give students immersive feelings in the learning process, achieve human-computer interaction, better meet the needs of people under the new era, and bring more information experience to students.

The main features of virtual reality are as follows: (1) Multi-sensing features: It means that virtual reality technology can simulate all kinds of people feeling, such as hearing, vision, smell, power and so on [3]. The mature virtual reality technology must have this feature. However, because of our current research conditions, technical research and other aspects are still in the critical period of continuous development, so the current perception of virtual reality technology still needs to be improved.

(2) Interactive features: It refers to that the users can achieve information transmission and feedback with the network system, while the system can also make the appropriate changes on the basis of user-related information [4]. For example, when users see an orange in the virtual environment, they can make the action of holding oranges, and can feel the weight of the orange, while the position of orange will change correspondingly with the different movements of users. As shown below.

Application Key Points of Virtual Reality Technology

The Application key point is blurring the actual things. It means to map real world space to information space timely. This work mainly includes following points:

（1）Build the basic model

Building a virtual environment: use advanced technology to build virtual
world based on real things. This can not only obtain relevant information of three-dimensional spatial correlation data, but also make it possible to carry out the reconstruction of relevant information in the virtual world.

(2) System tracking technology
With the helmet display, data clothing and other spatial sensors of interactive equipments to determine specific location and direction of user’s hand, foot, head and body.

(3) Sound tracking technology
Use differences of sound sources and sounds to set the location phase difference and the sound pressure difference, so as to successfully complete the sound tracking task.

(4) Virtual objects realizing
It is the cognitive techniques which make it possible for users to obtain the feeling of hearing, touching similar to the actual things from the virtual environment, so that users can more experience virtual object reactions when successfully manipulate virtual objects.

THE ANALYSIS OF CURRENT APPLICATION OF VIRTUAL REALITY TECHNOLOGY IN THE CAMPUS

Virtual Campus
This technology, as the earliest application of computer network technology in China's education industry, can better reflect the campus scene browsing function, and its browsing mode has distinctive features. However, in the virtual campus construction, especially in the simulation teaching environment it needs to be further studied to better meet the needs of the future and the requirements of different schools. This technique mainly involves these three aspects of knowledge: (1) Providing a simple virtual campus environment; (2) providing a complete visual virtual campus mainly from the academic affairs, teaching and other aspects; (3) We should put the advanced technology as the basis of education, take teaching tasks as the starting point, and timely add human system functions.

Virtual Laboratory
A staff uses virtual reality technology successfully establishes a variety of virtual scientific laboratories, such as chemical laboratories, geography laboratory. Virtual laboratories are unmatched by traditional laboratories, and its main advantages are as follows:

Cost saving
The establishment of virtual laboratories and the corresponding demonstration, can effectively solve the issues that traditional laboratory needs expensive equipments. To a certain extent, the virtualized experiment is not only closer to the actual experiment, but also allows students to experience
a special way of teaching. In the case of keep the design quality, this technology promotes the teaching level and save cost to the greatest degree.

**Risk avoidance**

In practice the experimental risks will be brought about due to improper operation of personnel, standardized experimental steps and incorrect operation process and so on. While in the virtual experiment process, teachers and students can do experiments at ease, with no worries of experiment risks. Furthermore, operational errors, accidental injury and other issues can be effectively avoided, and the safety of the experiment can be guaranteed.

**Get rid of the shackles of space**

Students can use virtual reality technology to conduct research on cosmic celestial bodies or atomic particles to study their interior and use this technique to simulate the structure of animals. So it can be said that this technology break the traditional time and space constraints.

**Virtual service platform**

It is possible to take the local area network as a campus site contact point, and use virtual services, interactive and other ways to achieve distance learning, so as to provide students with vocational education opportunities with the new technology.

**Virtual Campus Library**

If we store the relevant information in a virtual library in digital form, such as related information of offices, teachers and family, and thus establish the virtual library, so students can search information, read electronic magazine, books and literature on line. They also can download electronic resources and complete a variety of tasks including borrowing and return.

**SUGGESTIONS ON THE PRATICAL APPLICATION OF VIRTUAL REALITY TECHNOLOGY IN THE CAMPUS**

**Pay More Attention**

To a certain extent, the rapid development of society promote the rapid development of virtual reality technology, at present it has been vigorously promoted in the campus and bring more visual, auditory, smell and other experience to users. However, this technology still needs improvement, especially the sensor and machine hardware, so as to effectively reduce the cost and provide more convenient services to the campus staff. It is necessary to strengthen the renewal and research of this technology.

**Increase Publicity Efforts**

For example, a campus in China actively uses regular lectures, expert lectures, teacher-student forums and other ways to introduce virtual reality technology to increase the focus, guide people timely to deepen their impression of modern technology and provide users with personalized service,
so as to effectively enhance the practical effect of virtual reality technology.

CONCLUSIONS

Although virtual reality technology can imitate the real experimental process, it is only an auxiliary teaching tool to give students more auditory and visual experience but cannot completely replace the actual teaching. Therefore, it is necessary to combine virtual reality technology and the actual teaching together, so as to fully exploit the superiority of modern technology.

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