

Research on the Application of Virtual Reality Technology to Environmental Art Design

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Abstract: With the rapid development of information technology, the information age has come, and virtual reality (VR) technology has emerged as the times require. Information technology and the development of many industries in China have been combined. The application of VR technology to modern environmental art proves to be a good example. Introducing VR art into the modern environmental art simplifies the complicated design and improves the efficiency and quality of environmental design. In this paper, the demand for VR technology in modern environmental art and the application of VR technology are discussed.

1. Application of Virtual Reality Technology to the Needs of Modern Environmental Art

Usually, VR technology enjoys many characteristics, by using which, the application of computer can be simulated so as to achieve communication and interaction. In practical application, customers' thinking can be broadened according to their virtual environment. VR technology, which enables human beings to interact in a virtual scene, is currently applied to a relatively wide range, and is also a technology that is currently being emphatically developed in China. At present, it is mostly used in environmental art design. Revalent designers use computers to adjust and realize the virtual environment. Things in the virtual environment can be disguised as internal objects, and the virtual scene can estimate the designers' thinking to make innovation. Usually, before implementing this technology, the designer needs to discuss with the customer, adjust according to the customer's needs, make the preliminary design concept and design model, then find the problems from the model in the construction process, and finally find effective solutions. This method is relatively straightforward, and easy to operate, allowing customers to personally feel. In practical application, VR technology can be used for virtual demonstration of some complex structure designs and related contents. Such technology not only reduces the construction time, but also optimizes the work flow and reduces the difficulty of work.

2. Application Characteristics of Virtual Reality Technology

Because of its unique characteristics, VR technology is used to achieve many things that can not be done normally, which is also called "soul technology". In the using process, it mainly makes use of computer network and multiple technologies to form a simulation method, and creates a unique three-dimensional virtual mode, which can achieve internal interaction. Specifically, VR technology is a product of information technology, which combines the characteristics of many fields, forms a unique information environment, and uses information technology to develop a special space. It has made a great breakthrough in history and has been widely used. It can be used in real-life movies, real-life games and so on, especially in environmental design, since it can help environmental design to solve a large number of needs, specifically from the following aspects.

2.1 Efficiency

Compared with the traditional environment design, VR technology has made great breakthroughs. The traditional structure is often more complex and traditional environment design is relatively more wasteful in model and sand table. Moreover, the complex structure takes a lot of time to carry out relevant operations. VR technology can reduce the use of time and the cost. It takes advantage

of the unique digital technology to make virtual demonstration of the design and display it by computer. Users are allowed to observe the appearance of the model through VR technology, then find shortcomings and make timely adjustments, so as to improve work efficiency.

2.2 Interaction

VR technology fully shows the structure and model of environmental art design works. In the virtual environment, digital technology can be used to realize data interaction, receive relevant information, analyze the information, and give feedback to it. VR technology creates a real artistic conception for the virtual environment. It uses the unique three-dimensional digital model of the computer to realize the real scene. Users are capable of realizing interactive experience from the virtual scene, experiencing in person, and achieving a strong sense of reality.

2.3 Artistry

Since VR technology is the product of information technology, it enjoys comprehensive functions and can be used to realize image processing. In practical application, flash is used to display pictures and make adjustment. It is the same for 3D virtual technology which can also achieve 360 degree rotation and through which various details can be effectively observed. In addition, in VR technology, the pixels are very high and clearly displayed to users, so that users are able to have a special visual experience. Users will form a preliminary understanding of the project by observing the images, including structure, materials, technology, etc, all of which can also be adjusted according to users' needs.

3. Advantages of Virtual Reality Technology in Modern Environmental Art

In recent years, although China's environmental art has been significantly improved, with the continuous improvement of people's quality of life, their pursuit of environmental quality is also constantly improving. Environmental art is a bridge linking human beings and cities. In the home of human beings, environmental art is a display of cultural quality and a realm of people's spiritual pursuit. In environmental art, adjustments should be made according to the actual situation. In architecture, there are two spaces, the inside and outside, which involve a relatively wide range of areas, and requires a strong comprehensive ability for design. For example, furniture decoration and space layout are in need of reasonable and scientific methods. Environmental art design is quite different from the conventional art design. Both in structure and design, environmental art is relatively more complex, which needs the support of actual situation and natural conditions to form art space. In this process, it is essential to use effective and reasonable methods to combine with art in order to create an unique space so as to effectively meet people's various needs.

3.1 Show Obvious Improvement

In the application of VR technology, relevant work should be carried out in combination with the actual situation, using three-dimensional display technology, making effective use of this technology in environmental art design, analyzing and calculating the elements existing in environmental art through computer, designing preliminary effect maps according to users' needs, adjusting the unstable factors in the design, and applying the set parameters effectively. In this way, a preliminary effect will be showed, in which the use of scientific and reasonable methods can improve its performance. In this design, relevant designers are able to identify the technical points, and effectively control the technical points to achieve technical expression. This kind of environmental art design fully displays its important content, and designers are able to constantly improve their design ability by analyzing it.

3.2 Improve the Accuracy of Artistic Design

Nowadays, in the work of environmental art design, art design is also an important part of management. Only by ensuring that there are no problems in art design, can the effectiveness of environmental design be guaranteed. In the actual work, relevant technicians should clarify the

technical points and control them, and scientifically and reasonably carry out the work of art design in order to further improve its accuracy. In practical use, VR technology is suggested to be used to achieve technology conversion and control so as to lay a good foundation for environmental art design. The corresponding staff are expected to adjust the parameters according to the actual situation and the needs of users, and incorporate them into VR technology for processing, thus realizing the planning management and ensuring the accuracy of art design in the whole environmental art design.

3.3 Enhance the Scenery Display Ability in Art Design

In modern environmental art design work, environmental art requires relatively high allocation of landscape in the design process, and must meet the relevant requirements. Meanwhile, it is also a management work, which ensures the scientific nature of environmental art, so as to meet the needs of modern art design, and make use of the operation of science to constantly improve art design. By using VR technology, the landscape in environmental art is optimized to ensure that each landscape design meets the corresponding needs. VR technology can effectively deal with the work of environmental art, and configure the landscape according to different needs. There will be different configurations for different landscapes, so as to ensure that the settings are optimized to the users' great comfort. Only in this way can the landscape meet the needs of environmental art and improve its comfort.

3.4 Improve the Interaction between Design Parties

VR technology gives users a very strong experience by creating a virtual scene with three-dimensional environment. Users are able to enter the virtual scene and experience it for themselves. Details and specific proportions of the design can be found through internal observation. Using three-dimensional function to create a virtual scene allows users to personally experience the design concept. At the same time, users are capable of communicating with designers in the virtual scene, and discussing with designers about the internal shortcomings, so as to more effectively solve the differences between them and further meet the needs of customers.

4. Future Development Direction of Virtual Reality Technology

Since the beginning of 1990, many experts have been studying VR technology continuously. Until now, VR technology has made remarkable progress and has been applied in various fields with very ideal effect. It is a great breakthrough in human technology, breaks the traditional two-dimensional concept and is not bound by two-dimensional design. It is not limited in data and can complete a huge amount of data transmission. Theoretically, space in any environment can be realized under VR technology. VR technology is more clear than the usual in image display. It is mainly formed by computer information technology, and its cost is not high. Moreover, it has stronger processing power and faster processing speed than the computer. Its unique characteristics are conducive to the future development of our country.

Although VR technology has many characteristics and advantages, in fact it is not mature nor perfect. There are still many deficiencies. VR technology at present seems to be only in the initial stage of design. In the future, it may realize automation and intellectualization. For example, in environmental art design, it can automatically place facilities and adjust the angle of furniture. In the process, related work can be achieved through voice, and self-adjustment can be achieved according to human satisfaction. To further meet people's spiritual needs, especially the cumbersome space design, adjustment through intellectualization is conducive to improving users' experience. In the future application, VR technology will be more comprehensive, involving a wider range, and constantly provide services for people.

5. Conclusion

With the advent of the era of science and technology, VR technology will be more and more

widely used. But at present, there are still many deficiencies in VR technology in our country. The high cost makes it impossible to implement in large quantities, which results in limitations of its application. In order to solve this situation, the national government is required to provide strong support and train more sophisticated technicians so as to achieve the rapid development of VR technology for the future of our country.

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