Application of VR Technology in Art Design

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Abstract. In order to meet the people's aesthetic needs of higher level, the methods and means of the art design need to be innovated, so as to make the results of art design look more realistic and bring people a better visual enjoyment. VR technology is a virtual reality technology, the application of VR technology to the art design can innovate the way of the art design, form the realistic virtual environment and bring real experience and feeling. This paper has firstly analyzed the current situation, existing problem of art design and the VR concepts, and explored the application of the VR technology in the art design. The VR technology has applied to the art design, which can bring artists and users some advantages and provide many chances for art design creation.

Keywords: Virtual Reality Technology, Art Design, Application.

1. Introduction

The VR technology is a computer technology, which can create a virtual world and simulate the real three-dimensional environment or things to generate digital images [1]. It can transmit the information to the users through the digital media, such as physical feedback, acoustic feedback, and so on. And it can make people produce an immersive feeling by the auditory, visual and tactile effects, so as to form a real-time interactive 3D graphic interface. The VR technology has been applied to art design, which can show the designer's conception.

2. Digital Painting and Virtual Reality Technology

2.1 The Current Situation of Digital Painting.

Digital painting is commonly known as computer painting. The artists usually use the drawing tools and some corresponding drawing software to create art work, such as Photoshop, Painter, and so on. With the continuous development of software and development tools, the expression form of creation has become richer [2-3]. The created works are often rich in color and through application of special effect brush in digital painting and the superposition of various techniques. The digital painting covers a wide range, such as commercial advertising, animation production, and so on.

2.2 Problems in the Digital Painting.

The level of digital painting has been affected by many factors, among them, the development of science and technology is an important factor [4-5]. Before that, even great being, they only can present their imagination on the flat canvas. Until now, with the development of science and technology, the artists can show their world through the drawing software of hand-painted board. Artists have not yet freed from two-dimensional constraints, there is always a barrier between them and the works, so they cannot feel the immersive feeling.

2.3 The Concept of Virtual Reality.

VR is the acronym of "Virtual Reality" technology, which uses computer simulation to generate a virtual world in the 3D space, and provide users with visual, auditory, tactile and other sensory simulation [6]. The VR technology make users feel as if they are on the scene and the users can also observe things in the 3D space in timely.

3. Application Advantages of Technology in Art Design

3.1 Having a Good Artistic Advantage.

The application of VR technology in art design has many advantages, which has high requirement in image processing. In order to better show the image, some image processing technologies need to be implemented in VR technology, such as Flash, panorama and 3D modeling, and so on. It is helpful for designers to better understand and master the structure of art project. At the same time, some art ideas can be integrated into art design, so as to show the artistic characteristics and skills.

3.2 Improve Effectively the Efficiency of Art Design.

In the past art design, the original design process is very complex, which takes a lot of time for the designers to deal with it. But it can effectively change this situation by using the VR technology, and greatly simplify the process of the complex original design. In addition, some the problems of design cost and design time can be will solved in the simulation and sand table design. The art design model can be displayed in front of users by using the VR technology.

The VR technology is applied to the art design by the web technology, so as to implement virtual display. Therefore, people can appreciate and experience the result of the art design without the limitation of time and space. The designer can implement art design in the virtual space as long as he wears VR headsets in the design process. In addition, the designers can adjust some objects by tracking the position of the helmet, and also move the entire creative plane, so as to capture the inspiration and record the inspiration of the creation.

3.3 Providing the Experience for the Users.

The VR Technology has been applied to the art design, which can also provide the experience for the users. According to the psychological and sensory of user, the VR application can bring good feeling to the users. The users can directly touch the virtual world by virtue of the computer equipment and technology, and they can feel like you are actually there. The VR application can also meet the multi-perception needs of users for art design. People's perception of the outside world is very diverse, such as audio sense, visual sense, smell sense and touch sense, and so on.

In the traditional art design, it only can bring people a better visual effect, but cannot bring people a real touch. The application of VR technology can not only bring users multi-sensory experience and see the very realistic scene, but also make people truly touch and heart at the same time. It can give full play to the users' senses, let people get information by different levels and strength the deep understand of art design means. The VR technology makes displayed means of art design richer, and effectively make up for the deficiency of the traditional art design.

4. The Application of VR Technology in Art Design

4.1 Intuitive and Complete Art Expression.

The VR technology has been applied to the art design, which can generate the virtual 3D environment by with computer and network, and mobilize fully people's sense with the help of computer virtual equipment and technology. In addition, it can bring people a very real feeling in the virtual situation. Through the application of VR technology, the dynamic changes of the art design can be showed in the front of users, so as to strength users' understanding and feeling of art design. The VR technology allows people to experience the art design scheme of three-dimensional spaces. In the virtual environment, people can take part in any activity, such as art design results, design scheme of the program, and so on. With the development of computer, the information expression has been changed from the simple image expression to multimedia pictures expression, the conveyed contents have been also becoming more and more rich and the presented content has been becoming more intuitive and vivid.

4.2 Intense Immersion.

In the context of the continuous development of modern technology, people put forward higher requirements for the result of external information processing, hope it can fully mobilize the sensory organs while receive information, and take participate in the information environment from multiple perspectives and levels. The application of VR technology in art design can realize man-machine interaction, strength the interaction between users and art design, reflect the human-oriented art design, and show a good sense of field immersion. The application of VR technology can make users experience an immersive state in the art design, guide users to fully engage in the environment. In the virtual environment, people can see, hear and touch, just like in the real world. In addition, it enables people to obtain more authentic and reliable experience. People can feel more information, and also eliminate the sense of distance and comprehensive experience. When the designers make art in virtual reality, they are no longer separated by a layer of the screen to create, but really went into the real picture to produce. In this way, they can communicate and interact with works, let themselves also become part of the art design works. And the designer has a very strong sense of immersion, is easy to seize the inspiration and creativity. The designers can enter the space of their own imagination to create. It is hard for the 3D objects to show in the past. Art design only needs to show partly, but the work is complete. For such works of art design, it is difficult to make people really understand. In order to let people fully understand the work, it is often necessary to design works from multiple perspectives at the same time. It greatly increases the workload of artistic design. By applying the VR technology to the art design, the designers can move back and forth in the painting at will, so as to more intuitively feel the fluidity of lines and the richness of colors.

In a word, by applying the VR technology to the art design, it can bring people more possibilities, and make everyone become a creator.

4.3 Brand-new Exhibition Method.

By fully applying the VR technology to the art design, the users can operate the objects of the scheme in the virtual environment, and get real feedback form the virtual environment. This feedback is real-time, the VR technology can provide people with the virtual world of immersive interactive environment. In addition, the users can combine their wishes with the virtual world and virtual objects, and get the experience and feeling in the real environment, so as to get the experience and feeling to the real world, and it is also able to promote the art design of great power. If the users need to experience the art design, they can implement human-computer interaction through the application of VR technology in different behavior. In addition, they can also touch the virtual objects by the virtual devices in the virtual environment. They can feel the importance of the object, and obtain good sense of touch.

The interactive media is about the experience. Compared to the displayed ways and means other information, the VR technology has its unique characteristics, which can provide very rich information for people. In addition, the VR technology has interactive characteristics, which can make the art design become more personalized and liberalization. In the virtual environment, the users can choose their own point of view or ways to browse or involve in the virtual world. In addition, the users can experience and feel the scenery or objects of art design, and they don't really affect the art design works.

The virtual digital environment breaks the traditional physical world. People do not need to be bound by the physical world in the real world. They can feel and experience freely in the virtual art and design environment, so as to make the display of art design richer and freer. So, we can say that the VR technology makes the expressive field of the art space become wider, which beyond the space-time between works creator and the users, so as to express fully the value of the art design. When people enter the museum exhibition, they usually experience the dissatisfaction at the final result of the exhibition. People cannot get a good experience because of limitation of variety of materials and space, so the museum also wastes a lot of resource and materials. When a piece of art work is very hot, there are usually gather a lot of people in the front the art design works. For some visitors, they cannot get a good experience. Therefore, they only can record them by the camera.

By applying VR technology to the exhibition, creators can implement management by using the virtual device. People need not to gather together to review the work instructions and see a glimpse of works, but can directly delve into the works and communicate with the art works. Thus, it provides a new way to exhibition method, and realizes the human-computer interaction.

5. Summary

The development of the VR technology has not only opened up a new field of art, but also presented new and more attractive art forms to people. The VR technology is a new technology, which plays an important role in the art design. It can better interpret art, make the art forms more colorful, intuitive and vivid, and bring people good visual experience or real multi-sensory experience, so as to realize the communication between people and artistic works. In the process of artistic design, the designers can enter into the virtual three-dimensional world for creation, so as to grasp the inspiration and create more excellent works of art.

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