Research on Virtual Reality Technology in Public Art Creation

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Abstract. With the continuous update and progress of computer technology, there are more and more display ways in public environment, and many high-tech ways such as virtual reality are also integrated into the display of public environment design. Its interactive, comprehensive and realistic features enhance the artistic sense of the whole design. Public art creation is a kind of diversified art design that includes different disciplines. Its main carrier is the display of environment and culture, which involves a wide range of fields and can better meet the people's pursuit of sensory stimulation in modern society. Therefore, this paper will make an in-depth analysis of the application of virtual reality technology in public art creation, and briefly describe its design principle and its application mode, in order to provide some valuable opinions for future practice creation.

1 Introduction

Public art creation is a diversified design that includes different disciplines. Its main carrier is the surrounding environment and cultural inheritance, which involves a wide range of fields, and its most prominent feature is extensiveness and diversity. When designers create public art, they need to fully consider the environment, time, space structure and interactive image of the scene. Designers of public art need to integrate the environment and space of many different occasions, such as museums, art galleries, shopping malls, etc., and deliver artistic information to viewers through the mode of storytelling according to the current theme. With the help of the communication mode of art design, the art works with time and space constraints are deeply analyzed, so that the theme of art is obvious. After careful design and creation by designers, the unique space art is created, so that the audience can truly immerse themselves in it and realize spiritual communication with the audience.

In the past, traditional public art creation was usually presented to the viewer in a static mode. This static display was relatively boring and single, which could not meet the standards of the continuous development of contemporary social technology, and could not meet the promotion of public aesthetics. The emergence of virtual reality technology is finding a new solution to this problem. This technology has spread to all major industries, including public art, and virtual reality technology has added new blood to the dissemination of information and the inheritance of culture. Information technology and Internet technology have been helping public design to present more colorful forms, which has improved public design in the art field and provided a faster way for the public to watch public design and reduce the sense of distance. From the current social development, all museums have set up online browsing mode, and the offline experience stores of virtual reality technology have gradually increased, and even virtual reality exhibitions have gradually started. As a result, virtual reality technology has become the main force of public art creation, so it is necessary to improve the research of virtual reality technology in public art creation.

2 The Significance of Virtual Reality Technology and Public Art Creation

2.1 The Significance of Virtual Reality Technology

Virtual reality technology, also known as VR technology, is a new technology developed on the road of the development of contemporary science and technology. During the birth of this technology, the use of computer simulation system to create a three-dimensional folded virtual world can enable viewers to remove visual impact and add sensory simulation system of hearing and touch, so that viewers can experience an immersive feeling when using it, and experience the benefits brought by the new technology. According to the current development trend of virtual reality technology, the technical application of this technology is closely related to the modern three-dimensional integration technology. That is to say, in the process of application and implementation of three-dimensional integration technology, the application of virtual reality technology is perfectly integrated with it, and on this basis, virtual reality technology can enhance the control of the whole picture when processing the picture. From the popularization of virtual reality technology, it is not
difficult to see that the main manifestations of its technical core are divided into the following points: First, the application of display technology. The key is to take the three-dimensional display technology as the foundation, and then take the three-dimensional display technology as the carrier to carry out the process of technical display. Secondly, it is the demonstration of sound technology, which uses virtual reality technology to deeply analyze the sounds with different characteristics and transmit them according to the corresponding signals. Finally, it is the application of voice technology and its senses. Virtual reality technology basically uses natural language, and integrates natural language and technology effectively. On this basis, it maximizes the integrity of virtual reality technology and truly achieves technical intelligence.

2.2 The Significance of Public Art

The significance of public art in the streets of every city is very important. Public art plays an important role in the representative landscapes in cities and the commercial and cultural streets gradually emerging in most tourist cities, which make elegant artistic atmosphere render the whole street and build a bridge for cultural transmission. However, public art is not only the inheritor of culture, but also can show the characteristics of the city to the public from different perspectives, so that local residents and tourists can experience the atmosphere of the city more directly. However, with the accelerated pace of urban progress, urban planning is not reasonable enough, and many problems are gradually ignored, such as the design is too single, and so on.

3 The Purpose of Integrating Virtual Reality Technology into Public Design Creation

Nowadays, the display modes of various large-scale exhibitions have changed year by year, from traditional static display to dynamic display, from graphic display to multimedia technology display, and so on. The virtual reality technology uses the latest information transmission method, which is also recognized by many young people, and is regarded as a key link when some companies hold company exhibitions. The integration of virtual reality technology into the creation of public art is of great help to the future development of public art. Through virtual reality technology, designers of public art can look at their works from a new height, not only have new ideas to enhance the artistic sense of the design products, but also avoid the problems in the creation and exhibition, so as to improve the development of public art creation industry. The integration of virtual reality technology into public art creation can connect viewers, designers and the public of public art into a perfect chain. Designers can give full play to their unlimited creativity without being limited by time and place, and viewers can break free from the constraints of space, experience immersive pictures, improve their acceptance of art, and watch selectively according to their own preferences. For the learners of public art, they can also learn and communicate in this process, creating a new spark between art and art, and creating more unique public art works. In addition, virtual reality technology in the field of public art creation can look forward to the future development of the city, open up ideas and make it develop faster. At the same time, the prospect of public art industry will be bright, and the ecological circle in the field of public art will be well changed.

4 Application of Virtual Reality Technology in Public Art Creation

The traditional display modes of public art are generally located in some areas where the public congregates, such as art galleries, cultural streets, commercial streets and city centers. The exhibits include but are not limited to sculptures, frescoes, landscape facilities, etc. The public design areas are indoor and outdoor, and the exhibition duration may be temporary or permanent. The designed and presented works usually have ornamental value, artistic value and functional value, etc. Public art is usually displayed in a single way, waiting for the public to watch it in a certain corner, and putting up a sign beside it, which says the review of works. Such a display way is too monotonous, and public art works and their designers can't convey their feelings to the viewers, so the viewers can't really have emotional connection with the works, which greatly restricts the real function of public art works. In view of this, after the integration of virtual reality technology, the situation has been improved, and the following points can be adjusted in the public art creation exhibition based on virtual reality technology:

4.1 Intuitiveness

In public art exhibitions, they are usually divided into pre-stage exhibitions and physical exhibitions after their works are completed. At the beginning of a design work, designers usually use two-dimensional plane display, or hand-drawn sketches and 3D modeling design drawings. In this way, even if there are many pictures with different angles, the meaning of the design work can't be fully expressed, and users can't really understand the original intention of designing the work. However, with the help of virtual reality technology, new technologies such as digital three-dimensional model can be used to bear the design works. Under the escort of virtual reality technology, viewers can freely watch the design works from various three-dimensional angles and accept the meaning that the designers want to express, which also greatly increases the amount of information transmitted by the works. The public design exhibition of virtual reality technology has effectively adjusted the problems brought by the traditional 2D exhibition mode. The visual effect of public art exhibition of virtual reality technology has broken through three dimensions and entered the threshold of thinking and even five dimensions. The exhibition works will be displayed to the viewer more intuitively, so that the viewer can
completely engrave the various positions of the design works and their fusion effects in the environment. It can be said that virtual reality technology has opened up a brand-new path for public art exhibition, allowing public art to face users in the most direct way, and building a bridge between customers and design works.

4.2 Interactivity

Brenda Riel once said: "Interactive media is not only about information, but also about one's own experience." Compared with other information exhibition methods, the digital exhibition can change the traditional exhibition methods, that is, interactivity. The most basic meaning of interactivity is not simply to rely on vision to convey information, but to make all other senses be mobilized to realize the whole feeling of senses. The relationship between users and virtual works of art in digital exhibition is no longer the relationship between people and public works of art. The viewer will also break away from the bondage of passive acceptance, and explore the mystery of the work independently. He can appreciate the art work from different angles, and the viewer's own behavior and actions can influence the design work, or leave traces and so on. In the process of traditional art exhibitions and exchanges in the past, the most prominent way to express the meaning of works is to make a continuous small video based on the viewer's viewing route, but it can only present visual and auditory information to the viewer, and it is difficult for the viewer to see additional artistic expression from the video. However, the exhibition of virtual reality public art can break the limitations of the screen, break out of the constraints of time and space, put the viewers completely in the world of art works, and be able to interact with the art works they watch at will, thus liberating people's innate curiosity, and at the same time, fading away the sense of distance caused by the protection barrier set up by the exhibition hall for fear of damage to the display items. The interactivity of virtual reality technology in public art brings the distance between the design works and the viewers closer, and makes the viewers feel more intimate with them. This adjustment makes the humanistic value of digital display well reflected, and at the same time adds a lot of color to the future development of public art.

4.3 Authenticity

In real life, people perceive life with the help of many senses such as sight, hearing and touch. The world is a huge container in which all of us are deeply immersed. However, in the past, the traditional information display methods only took into account the feelings brought by visual senses, which made the viewer become a bystander, resulting in the alienation and unreality between design works. Compared with the public works of art displayed by virtual reality technology, it can not only give viewers a variety of sensory impacts such as sight, hearing and touch, but also make viewers touch objects that are difficult to touch in the real world. Virtual reality technology makes everything in the virtual world more real by using people's perception of life, and constructs a more vivid and idealized world than the real world. Therefore, the display of virtual reality public art not only breaks through the boundary between time and space, but also attracts more viewers because it is closer to life and more interesting in daily life.

4.4 Surreality

The exhibition of virtual reality public art does not only include art and design works that can be seen in real life. Its technology can completely simulate the visual and auditory effects in reality and show them in the constructed virtual world; At the same time, it can distinguish it from the real world, and design surreal public art works that can only appear in the virtual world by means of new ideas and new ways. Therefore, virtual reality public art exhibition can show surreal public art works. It is precisely because the design of public works of art is very free and has distinct characteristics that the design and display of works in the virtual world can be richer and more creative. In the virtual world, viewers can browse freely according to the angle they want to enjoy, and can also add their own ideas into public art works to create together. For example, some children are very interested in drawing in real life, so in the exhibition of virtual reality public art, they enter the "confused scribbling" in the virtual world, and try their best to use their imagination to create new works of art, which is also a way to sublimate design works. Virtual environment allows designers to create at will according to their own imagination, which is extremely free. The purpose of designing works is not only to present a visual feast for the audience, but also to map something to arouse the viewer's deep thinking and arouse the viewer's emotions. The virtual world built by virtual reality technology is a way to get rid of the shackles of the real world, which creates a creative environment with more freedom for designers, and makes a qualitative leap in the content of the exhibition and its display form and significance. Except for the lack of designers' own imagination, no other factors can affect the creation of art.

5 Conclusion

Through the cooperation of computers, different sensory experiences, and the interaction of screen objects, virtual reality technology presents a public design display platform with different angles and all aspects for viewers. The concept of public design has also gradually changed from simply focusing on the experience brought by the visual senses into an interactive model of multiple sensory impacts, so that the viewer can truly understand the meaning of the design works when they are watching. Virtual reality technology is the product of scientific progress in the new era, and it is more and more popular with the public. However, the investment cost of virtual reality technology is still on the high side, and it is
difficult to develop and design software. There are still some challenges to popularize virtual reality technology to the public life. In the future development, virtual reality technology needs to be deeply explored and practiced if it is to be applied to public design and creation more effectively and widely.

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