Research on the Application of Digital Media Technology in Museum Exhibition

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Abstract: With the continuous development of society and technology, digital media technology is more and more sophisticated and diverse. Museum staff are also more aware of the important value of digital media technology for museums, and gradually apply this technology to museum exhibitions. .Through the digital media technology, the museum's exhibition has been moved, and it has undergone great changes compared with the traditional, more in line with the needs of the modern era. However, it is worth noting that digital media technology is still in the preliminary stage of the museum exhibition. There are still many unknown areas and unreasonable places. Therefore, designers must have a deeper understanding of digital media technology in order to make it better. The application is in the exhibition. This paper gives a brief overview of the characteristics and advantages of digital media technology, and analyzes its specific application in the museum exhibition. Finally, it points out the inadequacies of the application, and hopes to provide some reference and suggestions to the relevant staff.

1. Introduction

As a cultural venue with protection, research, propaganda and education as its main tasks, the museum aims not to obtain profitable effects. It aims to let people know the history, culture and art of related cultural relics, and to be inspired and educated. In order for the museum to achieve this goal, it is necessary to display its collection of cultural relics to the visitors reasonably. At present, there are many unreasonable places in many museum exhibitions in China. If there are no certain themes and plots, only the cultural relics in the collections will be displayed regularly according to the age or type, which will not leave a deep impression on the visitors. .In the museum exhibition, the full use of digital media technology for dynamic display can make the exhibition have a better effect of visiting, and the story behind the collection of cultural relics is fully interpreted. Therefore, the rational and effective use of digital media technology in the exhibition has become the focus of the current research in museum exhibitions.

2. The Application of Digital Media Technology in Museums

In the past, museum exhibitions were mainly used to display the cultural relics in the exhibition hall or the carrying facilities, and the visitors also watched the collected cultural relics in the lobby or around the facilities. It has certain effects, but it does not leave a very deep impression on visitors. During the viewing process, visitors tend to keep moving with the crowd, and there is very little time to visit each collection of cultural relics [1]. The introduction of digital media technology into museums has the primary effect of presenting all artifacts to visitors in a digital form, and installing a multimedia image system with click-through capabilities next to the collection of cultural relics so that visitors can quickly learn about it. All information about cultural relics. In addition, these digital media can also play a role in the image and music, so that visitors can more vividly understand the history and cultural background of the cultural relics, and give visitors a deep impression in the interactive environment, which is invisible [2]. The distance between visitors and artifacts. With the use of virtual reality technology, visitors can also view the cultural relics from multiple angles, so that they have a clearer understanding of cultural relics. When the museum displays too many cultural relics and the traffic is too large, the audience can also use the computer system in the exhibition hall to view all the information in the museum [3].

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With the advent of the digital age, people's life is getting faster and faster, and their needs are becoming more and more diversified. If museums still adopt the traditional simple display mode for cultural relics display, only more and more visitors will lose interest. As a result, the flow of people in the museum gradually decreased, and the cultural function of the museum was lost. The application of digital media technology has made the cultural relics in the museum “moving”, which has greatly enriched the exhibition's exhibition effect and the way visitors visit, and also made the exhibition more ornamental [4].

3. The Specific Application of Digital Media Technology

3.1 The use of projection technology

Projection technology in digital media technology is a general term for a class of very important technologies. When this technology is applied to museum exhibitions, it mainly focuses on giant screen projection technology and holographic projection technology.

The so-called giant screen projection technology refers to the application of multiple projection systems around the cultural relics to realize the omnipresent presentation of cultural relics, and the images displayed by these projection systems are generally of large size and With a higher resolution, these images are then combined through multiple projection systems, making the entire image very magnificent [5]. Since the projection system combination will inevitably have some overlapping parts, the exhibition staff will use edge fusion technology to repair these overlapping parts so that they do not appear to have any chromatic aberration and violation. By viewing these images, visitors can get a very shocking experience, which will make a deeper impression on the cultural relics visited. For many paintings and paintings, due to the limitations of the space and environment of the museum, such as the traditional display method, these works can not be presented in front of the audience in full view, or can not observe the details well, give the audience Come to a bad viewing experience. When the giant screen projection technology is applied to the display and display of paintings and calligraphy works, the scrolling dynamic display can show the whole picture of the paintings and paintings to the visitors, and the parts can be enlarged to make them more vivid and specific [6]. For example, in the 41st Shanghai World Expo in 2010, the exhibitors of the China Pavilion used the giant screen projection technology to display the Chinese painting and calligraphy masterpiece “The Riverside Scene at Qingming Festival” in a dynamic form. During the exhibition, the size of the Qingming Shanghe map was magnified nearly 30 times by the giant screen technology, allowing visitors to fully experience the daily life of the people of the Song Dynasty in the scenes depicted in the Qingming River.

Holographic projection technology is mainly used to restore the three-dimensional image of the exhibited artifacts. In the specific operation, the exhibition staff used the laser as an auxiliary light source, and then used the photosensitive film to capture the image, so that the final three-dimensional image is a complete restoration of the original text. For example, in the exhibition of cultural relics of the animal heads of the zodiac in Yuanmingyuan, the exhibitors used holographic projection technology to display the water spray of the animal head in the form of three-dimensional images. The virtual digital world and the realistic life scene are in front of the audience. Perfectly combined to give visitors a strong impression. In addition, when applying holographic projection technology, we can also make full use of sound as an aid, so that the audience can have an illusion of being in the story of cultural relics while visiting, and bring a rich experience to the audience.

3.2 The application of multi-touch technology

Multi-touch system means that the computer user can use multiple points to control the computer. When the touch control operation occurs, the system can realize the control process through automatic recognition of the software. The system is generally controlled by a touchpad. Screen device and touch screen display. In the museum's viewing behavior, not all cultural relics are attractive to visitors. For some visitors, there may be only a few cultural relics of interest.In the

traditional museum exhibition, because the display of cultural relics in the collection is arranged according to certain rules, if visitors want to find the cultural relics they are interested in, they can only browse along the order of cultural relics. The exhibition mode not only increases the useless browsing time of visitors, but also reduces the visitors' interest in visiting. Through the multi-touch system, multiple visitors can simultaneously use the computer system in the museum to find information about cultural relics, and have a detailed understanding of all the cultural relics in the collection, so as to find their own interests, and finally accurately follow The site of the cultural relics given on the system will be visited at a fixed point. In addition, in the traditional way of exhibition, the information of certain cultural relics can only be displayed in the form of graphic layouts. Due to space and environmental constraints, it is difficult for the staff of the exhibition to have detailed information on these cultural relics. show out. Therefore, the museum can store the detailed information of the collected cultural relics in the computer system and display it on the touch screen. The viewer can understand the detailed information of his cultural relics by sliding touch. The use of multi-touch technology not only speeds up the visitor's visit efficiency, but also allows visitors to have a deeper understanding of cultural relics information.

3.3 Ultra high definition math display technology

The cultural relics collected in the museum are often of great value and significance. Therefore, in order to protect the cultural relics and prevent them from being damaged, the museum exhibitors often place these artifacts in the exhibition cabinet with isolation effect. Although this kind of exhibition mode has played a role in protecting cultural relics, it also makes it impossible for visitors to view these cultural relics more intuitively, thus affecting their viewing experience. In addition, for some larger or smaller artifacts, the audience can only look up or look down during the visit, and can't see the overall appearance well, nor can they get a full understanding and understanding.

The use of ultra-high definition digital display technology in museum exhibitions can well solve the inconveniences encountered by the above audience during the viewing process. For some cultural relics that are not clearly understood, you can use ultra-high-definition digital display technology to enlarge the cultural relics first, and then display them at super-high resolution, so that visitors can view the cultural relics during the viewing process. There is a more comprehensive understanding of the process. Ultra-HD digital media technology has been used in the exhibitions of the National Museum. For example, using the 4k ultra-high definition digital display technology, the statues of the Guanyin Bodhisattva in the Song Dynasty are clearly displayed in front of the visitors, so that the carving details of the entire Guanyin Bodhisattva can be observed by the audience, greatly enhancing the viewing effect.

4. The Defects in the Application of Digital Media Technology

4.1 Application mode curing

Although digital media technology can make museum exhibitions have better effects, in the current practical application, museum exhibitions have not yet applied digital media diversity, and most of them are common and solidified technologies. After many times of viewing the cultural relics displayed by digital media technology, visitors will lack a sense of freshness and thus reduce their interest in visiting. For example, in the use of holographic projection technology, many museums use this technology in all of its cultural relics exhibitions, so that the entire museum is in the process of displaying a three-dimensional image. This display method allows visitors to have a The image of the visit experience, but also will make visitors feel the exaggeration of the form of exhibition, making the interest of the visit less and less.

4.2 Insufficient integration with cultural relics

The use of digital media technology in museum exhibitions is mainly for the purpose of better display of cultural relics. All means should be expressed around cultural relics, rather than

deliberate technological "shocking skills."At present, in some museums in China, in order to pursue the trend of the times, it is difficult to combine many digital media technologies and cultural relics to display, rather than thinking about whether cultural relics have a good fit with the media technology. Guarantee the display effect of cultural relics. Although this kind of exhibition can make visitors feel refreshed, in some cases it may achieve the opposite effect. For some cultural relics, its educational significance and historical value mainly lie in the cultural relics itself. If too many digital media technologies are applied to these cultural relics, they will only take the lead, and the value of these cultural relics itself cannot be well displayed. In the process of viewing, the audience may only be able to appreciate the application effect of digital media technology, and ignore the meaning of the cultural relics themselves.

4.3 Excessive use of digital media technology

Excessive use of digital media technology is also a prominent disease in the current museum exhibition. Although advanced digital media technology has many advantages, if you use digital media technology too much and link all forms of exhibition with digital media technology, it may lead to a decline in the value of museum visits, causing visitors to Disgusted. In the hearts of our nationals, the museum has always been a place of classical elegance and rich cultural atmosphere. Walking into the museum is also a process of cultivating sentiment and thinking about life. Especially for museums such as history, culture, and art. If visitors enter the museum and see the application of digital media technology, the value of the museum itself will be very small. During the visit, the audience will also It will only pay attention to the miracle of modern science and technology, and ignore the historical value of the cultural relics visited. This phenomenon obviously does not meet the original intention of using digital media technology in the museum exhibition.

5. Conclusion

With the progress of the times, the exhibition mode of museums will inevitably become more diverse and rich, and the rapid development of science and technology has made the application of digital media technology in the museum exhibitions become the trend of the times. The diversified dynamic display is also the theory and practice of today's museum exhibitions. Should be concerned and valued. Through the above discussion, digital media technology can make "cultural materials live", so that cultural relics stories can be presented in "hypermedia", so that viewers can get a better viewing experience; but there are also some areas that need improvement, if not With the proper application of these technologies, the effects of museum exhibitions are hard to be effectively improved. In the near future, digital media technology will certainly become more advanced and more diverse. The museum's exhibitors should always keep in mind the nature of the museum itself and the original intention of the cultural relics, and use digital media technology appropriately and reasonably to have An interactive, fun and dynamic interpretation of the story of the artifact is presented to the audience. I believe that with the joint efforts of the museum staff, China's museum exhibition will certainly get better and better.

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