Application Prospect of AR/VR Technology in Red Culture Communication

-- Take "Nanchang City Relics" as an Example

Chao Wang, Yiqing Wang

College of fine arts, Jiangxi normal University, Nanchang 330022, China

Abstract

Architecture is the sound of a city. The traces left by the years tell us the past stories. Architecture is the epitome of Chinese culture and the inheritance of spiritual civilization. The ancient buildings in Nanchang also convey the red cultural spirit, but many red Cultural ancient buildings ceased to exist in the artillery fire of war, in the change of time, and in the transformation of urban planning, and the memories of history gradually disappeared. The digital application of cultural heritage can spread the dissemination of regional historical culture with the characteristics of diversity and interaction. The comprehensive application of digital technology has enriched the ways of cultural heritage protection, and has a positive role in promoting the spread of regional red culture and cultural protection.

Keywords

Architecture; red Cultural ancient buildings; Nanchang; red cultural spirit; AR/VR Technology.

1. The Concept of AR/VR

Virtual Reality (VR for short) refers to a simulated three-dimensional simulation environment generated by a computer, which combines vision, hearing and even touch, in which people can explore and interact, and is an immersive simulation environment. The conventional graphic resource browsing, image material information display, and artwork display modes will be distinguished from each other, according to immersion, interactivity, and artistic processing, forming the main line of red cultural and historical scenes, and building the old Nanchang red culture from multiple angles. Ancient buildings provide an immersive interactive experience. With detailed and sufficient historical information, users can understand the story of each building more clearly.

Augmented Reality (AR) is the real-time superposition of information generated by calculations in the real world. It provides a mixed interactive experience through visual, auditory, tactile, somatosensory and even olfactory sensors, so as to realize the effect of virtual information on the real environment. "strengthen". The virtual reconstruction of ancient buildings is applied to the real world, and the real environment and virtual objects are superimposed on the same screen or space in real time. Augmented reality provides information that is different from what humans can perceive in general. It not only displays real-world information, but also displays virtual information at the same time. The two types of information complement and overlap each other. In visual augmented reality, users can use the mobile phone display to combine the real world with computer graphics, and then they can see the real world surrounding it. And present a new environment with real sensory effects to users. Therefore, the augmented reality system has the new characteristics of combining virtual and real and real-time interaction.

2. Red Culture Spread under Digital Application

In the long history of Chinese culture, many cultural forms have disappeared. Under the background of the development of modern technology, the use of AR technology for the restoration, protection and dissemination of historical culture is a new trend and direction for development. According to cultural heritage The current situation of destruction, the rationalized digital protection of different cultural heritages, the integration of the red cultural relics in Nanchang City, the discussion and summary of the protection method of this new carrier, the analysis of the advantages and disadvantages of its promotion, and the formation of a culturally characteristic The dissemination mode of AR cultural heritage.

The recording and dissemination of the damaged red culture in the traditional period is basically a combination of pictures and documents, and the old model of combining physical storage has not been well popularized and disseminated. In today's society, digitization has changed all aspects of people's lives, and the cognitive methods and structures in the context of network communication have changed. Only by making the information younger and more portable can the red cultural memory spread more widely.

With the change of emerging technologies and the continuous optimization and reform of artistic expressions, people are no longer easily satisfied with traditional art publicity and display expressions. As the digital art culture industry penetrates into all aspects of people's lives, as well as the advancement of artistic concepts and expression methods, communication The diversification of modes and the flattening of communication methods are inevitably drawn by the trend. Only by interacting and connecting cultural heritage with users and forming cultural influence can culture be more effectively spread in the current society. Through the unique display methods of AR and VR, according to Historical research materials, the historical building with red memory culture is virtually reconstructed through digital means, and it is designed into an APP or developed into an experience game. Put our virtual ancient buildings in Nanchang City, and when the player passes through a specific historical place, he can scan and view the historical buildings through the mobile APP. The peculiar state of coexistence of history, present and future will be realized. The red cultural memory discovered by users' self-exploration and excavation makes communication more interactive. Virtual communication is an important breakthrough point for the sustainable development of Nanchang red culture.

The dynamic habit of user groups to obtain information, for traditional cultural heritage simply displayed in museums and other static protection methods can no longer match people's habit of receiving information. In this transition, virtual reality provides users with dynamic information and interactive experience. The method of obtaining information is the communication method we must tap in the digital age. The information dissemination based on AR/VR technology has three-dimensional characteristics, which can prompt users to obtain the perfect integration of knowledge, dynamic pictures and sound through the display when receiving information, and vivid information to ensure the efficiency of information reception. Dissemination of specific information based on AR/VR software technology. When the information is placed in front of the camera, the display screen can display a specific three-dimensional image. For example, in front of the Catholic Church in Nanchang, AR technology can use AR technology to visualize the image data of Bayi Yishi. The restored battle moments are superimposed on the real scene to stimulate readers' interest and enthusiasm.

The entertainment mentality generated in the digital age is a natural change produced by the combination of user groups' lifestyles and consumption patterns. The traditional passive red cultural instillation is obviously not enough to attract the current user groups. Pay attention to the user's interactive experience and improve the aesthetic level. The younger, gamified, and

dynamic experience of red culture guides users to actively obtain information and complete better and more popular communication.

3. Advantages of Digital Application in Red Culture Communication

To spread and inherit the intangible and intangible non-material things like "culture" requires the collection and preservation of those material carriers or recording and other means to remove their material form, and continue to pass them on through inheritance and education. Make it continue and develop in people, groups, regions or society. Therefore, the protection of culture is not only the "preservation" of a material form, but also a cultural inheritance that conforms to the background of the times. This requires a new medium to build a bridge for us to understand the city in which we live. The emergence of AR technology is a new hope, and it may become a new "memory" tool.

The biggest feature of AR technology is that it can superimpose the digital information you need on the real environment, and render it in real-time on the smart terminal display, so as to achieve enhanced information in the real environment.

Red cultural resources protection and system organization need to effectively keep up with the times, realize digital restoration, virtual display and communication and other aspects, and realize leapfrog development. Create an urban heritage project in Nanchang based on AR and VR technology to create a friendly and informative experience, which can provide audiences with an immersive interactive experience. It can provide people with convenient and quick red cultural information channels. The important thing is that it can be represented by the "Ganpo Red Culture". The series of red cultural intangible cultural heritage projects provide preliminary experiments of digital virtual reconstruction and reproduction projects. As the technology accumulation of the project platform matures, the framework is perfect, and after completion The "AR/VR Nanchang Urban Relics" project will make full use of emerging communication methods and become a sample of the promotion and display of Jiangxi's red culture. It will provide technical resource support for the development and promotion of related red cultural products in the Ganpo region and even the whole country, as well as the creation of red culture and art. It will become a business card for the public to deeply understand and experience the red culture of Jiangxi. It will become a powerful brand to showcase the red culture of Jiangxi.

At present, most of the artistic expression research units and cultural exhibition systems for the red culture of Jiangxi Province are still stuck in the combination of pictures and documents at the technical management and data management communication level, combined with the old model of physical storage. Research and develop AR/VR "Nanchang City Relics" virtual reproduction. It is planned to combine a large number of virtual interactive methods, abandon the traditional web page graphic browsing method, and carry out artistic innovation. Create a new form of red cultural communication with immersive, gamified, and entertaining display and communication methods. It not only meets the needs of industry experts and scholars to consult data, but also truly enhances the popular science and dissemination functions of virtual cultural museums for the majority of non-professional people. Through research and development to explore new forms and platforms, and to assemble development tools, development environments and support platforms for virtual reconstruction of graphics and image data, provide a certain technical reserve for the long-term research of red culture protection, and make the spread and protection of cultural heritage more accurate and Diverse.

AR technology can analyze the information points of the pictures through the specific pictures on the plan, superimpose 3D models, animations, videos and sound dynamics according to the information points, show the whole case process through 3D model roaming or animation, and even assist cultural propaganda work. The dynamic interactivity of AR technology in

information release and promotion is one of its major advantages. It can pick up some interactive theme information through specific pictures, and complete the interaction through the 3D model of the virtual world to increase the interest.

In the city of Nanchang, pictures or codes with data information are implanted in the original red site to provide users or tourists with understanding and experience of historical information. This information can be improved through game interaction in the virtual world to increase user participation and interest At the same time, mobile AR can be used to push all kinds of information. This kind of push can not only have the on-site nature of traditional information push, but also provide some inconvenient or unavailable information on site, so as to keep the information timely, effective and Its richness.

4. The Prospect of Digital Applications

With the increasing maturity of digital media technology and the gradual systemization of the AR, VR, and MR equipment industry, people's demand for cultural experience is increasing day by day. As the technology becomes more and more mature, the experience cost is gradually reduced, and a way that the public generally uses and accepts is formed. Increase the readability and dissemination of data through digital means, and make inheritance more efficient.

References

[1] Qing Qi, Chen Jinying, Chen Junfeng, et al. Research on network social interaction based on AR/VR[J]. Communication and Information Technology, 2018(1): 37-38.

[2] Wu Yantao. The rapid development of AR and VR on Unity3D platform [M]. Beijing: Tsinghua University Press, 2017: 76.

[3] Yuan Li, Gu Jun. Frontier Topics of Intangible Cultural Heritage Protection [C]. Culture and Art Publishing House, 2017 (11).