

Research on the application of virtual reality technology in the communication of traditional art and culture under the background of new media

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Abstract: *With the continuous development of the society and the continuous progress of science and technology, people have more and more channels to obtain information, and the new media provides more convenient conditions for people. Under the background of new media, the communication of traditional culture and art needs to adapt to the new social development situation, apply the virtual reality technology to the communication of traditional culture and art, realize the inheritance and development of traditional culture and art, and promote the healthy development of China's cultural industry. This paper analyzes the importance of the application of virtual reality technology in the communication of traditional art and culture, discusses the problems existing in the communication of traditional art and culture under the background of new media, and puts forward the strategy of virtual reality technology in the communication of traditional art and culture, so as to promote the healthy development of traditional art and culture in China.*

Keywords: *new media; traditional art; cultural communication; and virtual reality technology*

1. Foreword

New media is the product of the development of the information age, which provides people with more convenient conditions for communication, and provides a new way and platform for the dissemination of traditional culture and art. In the context of new media, the society has put forward new requirements for the new generation of art and professional transmission professionals, who need to solve the problems of new media technology with innovative, cross-border thinking and vision, so as to make the development of the new media field more dynamic. With the continuous development of virtual reality technology, its application in the dissemination of traditional culture and art is becoming more and more extensive, which provides more convenient conditions for the inheritance and development of traditional culture and art, and can realize the effective protection and inheritance of traditional culture and art, and plays an important role. In this process, the new generation of art and media professionals is the key. They are the readers and communicators of traditional art and culture in the new media environment. They will use virtual reality technology to inject more innovative forces into the development of modern society.

2. The application value of virtual reality technology in the traditional art and culture communication under the background of new media

2.1 Expand the audience group of art communication

Traditional ways of art communication are limited by physical space, which require visitors to go to art galleries or museums, and these ways are limited by geographical location, time and cost. However, the emergence of virtual reality technology has changed this pattern. Through virtual reality helmets, people can visit art exhibitions around the world anytime and anywhere, whether ancient Dunhuang murals or modern installation art can travel through time and space and present in front of them. This not only overcomes the limitation of physical distance, allowing more people to have the opportunity to contact with the art and culture of all over the world, but also enriches the way of art appreciation, expanding the audience's point of view from a fixed two-dimensional plane to a three-dimensional three-dimensional space, providing a new artistic experience. More importantly, this way does not need the audience to have too much artistic background knowledge, only through the intuitive visual experience, you can subtly improve the artistic quality in the process of enjoying the art. Therefore, the

application of virtual reality technology not only greatly expands the audience group of art communication, but also promotes the democratization of art and culture to a certain extent, so that art can better serve the society and meet the spiritual and cultural needs of more people.

2.2 Improve the sense of interactivity and immersion

In the traditional art appreciation scenes, the audience often watches them as a passive recipient, and there is a certain distance between them and the art works, and the interactivity and immersion are relatively weak. However, the introduction of virtual reality technology allows the audience to contact and experience the art in a new way. They are no longer just bystanders, but can be immersive and deeply interact with the art works. For example, the audience can enter a 360-degree panoramic art exhibition space through virtual reality technology to appreciate and understand the art from different perspectives, different distances and even from within the art works, which greatly improves the audience's sense of participation and immersion. More importantly, virtual reality technology can also enable the audience to participate in the process of artistic creation, such as virtual sculpture, virtual painting, etc. The audience can create freely in the virtual environment, directly influencing and changing the works of art. This unprecedented interactive experience greatly enhances the immersion and attraction of art. In this case, art is no longer a kind of superior existence, but becomes more close and vivid. People can understand and appreciate art more deeply through intuitive experience, and enjoy the fun brought by art^[1].

2.3 To protect and preserve the artistic heritage

For many physical art heritages, they are facing the erosion of time, environment and human factors, and gradually lose their original features. The application of virtual reality technology can accurately replicate and preserve these artistic heritage in the form of three-dimensional digitization, and can even restore the lost or damaged parts, so that they can be permanently preserved in the virtual world. For example, some ancient murals, sculptures or buildings, through virtual reality technology, can preserve their whole picture in an all-round and multi-angle way, and can be restored according to historical data, so that they can be displayed in front of people in the form closest to the original appearance. In addition, because these copies of the artistic heritage exist in the virtual space, they can withstand countless "viewing" without causing any substantial damage, greatly reducing the pressure on the physical artistic heritage. The audience can also appreciate and study these artistic heritage without the limitation of time and space, which greatly improves the accessibility and visibility of the artistic heritage. Therefore, the application of virtual reality technology under the background of new media can not only realize the high-precision preservation of artistic heritage, but also provide a safe and convenient way for people to watch and learn, which plays a vital role in the protection and inheritance of artistic heritage.

3. The dilemma faced by virtual reality technology in the communication of traditional art and culture

3.1 Difficulties in understanding and mastering new technologies

First, the acceptance phase of new technologies is often accompanied by difficulties of understanding. Virtual reality technology is a new way of artistic expression. Its internal understanding of working principle, use method and influence, for many artists who have never been exposed to such technology, it undoubtedly increases the difficulty of learning and understanding. Secondly, the mastery of new technologies requires a lot of time and energy. Virtual reality technology involves the selection of hardware devices, the application of software platforms, the learning of programming language and the creation of virtual content, etc. Each link requires artists to have certain technical knowledge and skills, which is also a big challenge for many artists who focus on artistic creation themselves. Finally, how to integrate the new virtual reality technology with the traditional art and culture, to create the works with the unique artistic value and ornamental experience, is also a very complex problem. It requires artists to have a deep understanding of virtual reality technology and traditional art and culture, as well as an innovative thinking and experimental spirit. The understanding and mastery of virtual reality technology largely determines its application effect in the dissemination of traditional art and culture. However, the current situation is that many artists still have great difficulties in this aspect, and the wide application of virtual reality technology has set up difficulties^[2].

3.2 Challenges of authenticity and originality

First of all, from the perspective of authenticity, virtual reality technology generates virtual environment and virtual experience through simulation. However, no matter how refined and realistic the virtual scene and experience are, it cannot completely replicate the complexity and uniqueness of the real world. This gap between virtual and real may affect the effect of art communication to some extent, because the charm of art often comes from its ability to reveal and express real life and human nature. Secondly, originality is the life of art and the key to the unique value and significance of artistic works. However, the application of virtual reality technology may lead to reduced originality. For example, in order to adapt to the characteristics of virtual reality technology, artists may tend to use some proven virtual reality production techniques and expression techniques, rather than independent thinking and innovation from the perspective of art. Finally, the universal application of virtual reality technology may make people excessively pursue the novelty and stimulation of virtual experience, while ignoring the exploration of the depth and connotation of art works, which may also weaken the originality of art.

3.3 The dilemma of protecting traditional art and culture

Traditional art and culture is the spiritual symbol and historical memory of a nation, and its value lies in its uniqueness and unreplication. However, virtual reality technology spreads artistic culture through reproduction, simulation and reconstruction, which probably to some extent weakens the uniqueness and depth of the original work of art and diluted its cultural connotation. On the one hand, in the virtual environment, the audience's experience may be too dependent on technology, while ignoring the artistry and cultural nature of the art work itself. For example, in a virtual museum, audiences may focus more on the novelty of the virtual experience than on the historical context and artistic value of the exhibits. This situation may lead to the audience's loss of perception and understanding of the real work of art, so that the original meaning of the work of art is diluted. On the other hand, the application of virtual reality technology may lead people to rely too much on the dissemination of traditional art and culture, and may even over-rely on virtual experience while ignoring the real art works and actual art places, so that the audience can gradually stay away from the real art experience. This situation is a great challenge to the protection and inheritance of traditional art and culture. The impact of new media makes the communication of traditional art and culture face new challenges. How to find the strategy to adapt to the new environment of the traditional art and culture, and how to use the new technology for innovative dissemination while protecting the traditional characteristics, is the problem that the relevant personnel need to think about.

3.4 The difficulty of accepting the new way of experience

As a brand-new technology, the immersive experience and interactive participation provided by virtual reality greatly enrich the expression of art and culture and the form of audience participation. However, whether this new way of experience can be accepted by all the audience, and how to make it into more acceptance of the audience, is also a current dilemma. First of all, from the technical point of view, the operation and experience mode of virtual reality technology are quite different from the appreciation mode of traditional art and culture, which requires the audience to have a certain process of learning and adaptation. It is a huge challenge for those audiences who are accustomed to the traditional art experience style. Secondly, the equipment threshold of virtual reality technology and the requirements of the experience environment will also affect the acceptance of the audience. High equipment price, complex equipment operation, and possible physical discomfort may prevent audiences from accepting this new way of artistic experience. Finally, the change of artistic experience caused by virtual reality technology may also affect the audience's understanding and acceptance of traditional artistic culture. In the environment of virtual reality, the display and interpretation of art works and the way of audience participation have changed, which may change the audience's understanding and perception of art works, and even lead to the audience's misunderstanding of traditional art and culture^[3].

4. Specific strategy of virtual reality technology in the communication of traditional art and culture

4.1 Enhance technical education and training

First of all, art and cultural institutions need to actively carry out the learning and training of virtual reality technology to improve employees' understanding and mastery of new technologies. In this process, we can not only organize regular internal training and technical seminars, invite industry experts to share, but also cooperate with higher education institutions to bring in interns and new employees with relevant professional knowledge and technical skills. Of particular concern is the improvement of teenagers' new media technology capabilities to seize the opportunities of rapid social and economic development in the Greater Bay Area and train them to become future leaders in technology and art. Secondly, for artists and creators, they should be allowed to deeply understand the characteristics and possibilities of virtual reality technology through practice and experiment. To this end, setting up dedicated virtual reality laboratories that give them room for innovation and experimentation may be a strategy to consider. Thirdly, for the audience, they can understand and experience the virtual reality technology through open days, workshops, lectures and other forms, so as to reduce the strangeness and resistance to the new technology, and increase their participation and acceptance. Finally, from the macro level, the government and relevant industry organizations should issue corresponding policies and guidance to promote the education and training of virtual reality technology in the field of art and culture communication, such as setting up a special fund to support research, providing policy support, or establishing industry standards.

4.2 To protect the authenticity and originality of the art

First of all, the originality of art should be emphasized, especially in the artistic creation in the virtual reality environment. Artistic originality needs to respect and retain the spiritual core and aesthetic emotion of the original artistic creation. They can help artists to express their creative ideas more accurately in the virtual environment by developing and using specialized virtual reality art creation tools. Secondly, the authenticity of the art should be respected and protected. When spreading traditional art culture through virtual reality technology, the form and style of the original art works should be reproduced as much as possible, the original visual and conceptual experience should be restored, and excessive modification or deformation caused by technical processing should be avoided. By adding a detailed introduction of cultural and historical background, it can also help the audience understand the original meaning and value of the art works. Finally, the authenticity and originality of art should be protected through policies, regulations and industry self-discipline. For example, strengthen the copyright protection of virtual reality art works, and develop strict use and reproduction regulations to prevent abuse and piracy. Through the education and training of artistic creators, to improve their awareness and respect for the authenticity and originality of art. In the communication of traditional art and culture using virtual reality technology, relevant personnel should pay attention to protecting the authenticity and originality of art, enhance the depth and breadth of art and culture communication, and further promote the dissemination and development of traditional art and culture under the background of new media^[4].

4.3 Innovate the way of art experience

First, virtual reality technology to create an immersive art experience environment for the audience. In this environment, the audience can not only appreciate every detail of the art work up close, but also watch it from different angles and viewpoints, and can even touch and operate the art work by hand, which will bring unprecedented artistic experience to the audience. At the same time, this environment also provides an ideal platform for interdisciplinary training, especially the art and technology center established in the college, which provides opportunities for the art world and the public to experience the impact of new technologies on different forms of art creation. Secondly, the interactivity of virtual reality technology is used to make the art experience more dynamic and participatory. For example, design some interactive games or tasks to guide the audience to deeply explore the work of art, so as to deepen their understanding and perception of the work of art. Finally, socialize the artistic experience through virtual reality technology. For example, create a virtual art community, so that the audience can communicate and share with other audiences, and even can directly interact with the artists, which will make the artistic experience more rich and diversified.

4.4 The combination of traditional art and culture communication and virtual reality

First, virtual reality technology provides a new way for the preservation of traditional artistic culture. For example, 3 D scanning and modeling techniques can be used to transform physical artworks into digital forms and display them in a virtual environment, so as to achieve lossless protection of artworks. Secondly, the virtual reality technology can reproduce the art works in a highly realistic three-dimensional form, enabling the audience to appreciate and understand the art from a new perspective and distance. For example, the audience can closely observe the details of the work of art in the virtual space, and can even can travel through time and space to reach the creative background of the work of art, so as to obtain a deeper artistic understanding and experience. Thirdly, virtual reality technology can also realize the socialization and globalization of artistic experience. Through the Internet, people can share artistic experiences and communicate and discuss in the virtual space, which greatly expands the audience of traditional art and culture and contributes to its global dissemination. Finally, the virtual reality technology also provides the possibility for the innovation of the traditional art and culture. For example, through virtual reality technology, artists can try new ways of artistic creation, such as virtual sculpture, virtual painting, so as to protect traditional art culture while promoting its innovation and development. The application of virtual reality technology in protecting and spreading the traditional art and culture can not only continue and develop the traditional art and culture, but also provide it with new vitality and possibilities^[5-6].

5. Conclusion

The continuous development of science and technology, virtual reality technology has been applied to all walks of life, the traditional art culture communication field also gradually realize the application of virtual reality technology, virtual reality technology in the application value of traditional art culture communication, can be virtual reality technology and the integration of traditional art and culture, based on virtual reality technology, create real art experience scene, effectively improve the audience interest in traditional art culture, improve the audience understanding of traditional art culture. In addition, virtual reality technology can also improve the audience's aesthetic ability and artistic accomplishment, and provide important support for the inheritance and development of traditional art and culture. Therefore, in the context of new media, it is necessary to fully realize the application value of virtual reality technology, and effectively use virtual reality technology to spread and promote traditional art and culture, so as to provide a good artistic experience for the broad audience.

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