Reflections on the Digital Protection and Dissemination of Traditional Ceramic Handicrafts of Non-Foreign Heritage

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Abstract: As an important part of Chinese culture, traditional ceramic handicrafts have a deep historical deposit and artistic value. However, as times change and modernization advances, these traditional crafts are gradually losing their market and the basis for inheritance. In order to protect and inherit these non-heritage cultures, the use of digital technology has become an important tool. This paper will discuss the digital preservation and dissemination of non-heritage traditional ceramic handicrafts, exploring how digital technology can bring new opportunities and possibilities for the inheritance and development of non-heritage culture.

1. Introduction

Digital technology provides a new way of thinking and development for the inheritance and development of non-heritage culture, as a way to realize the digital protection and dissemination of cultural heritage. At the same time, the application of digital technology also provides strong support for the innovation and upgrading of non-heritage ceramic handicrafts, and promotes the inheritance and development of non-heritage ceramic handicrafts in contemporary society. In terms of digital conservation, through 3D scanning technology and digital exhibition halls, ICH ceramic handicrafts can be digitally protected, which not only preserves their unique cultural connotation and artistic value, but also realizes the protection of ICH of traditional handicrafts [1].

2. Digital Construction of Non-heritage Traditional Ceramic Handicraft

2.1. Characteristics of Non-heritage Traditional Ceramic Crafts

NRM traditional ceramic handicrafts are an important part of Chinese culture, with a history that dates back thousands of years to the Neolithic era. Its characteristics include the following: First, the process of making NRM traditional ceramic handicrafts is very tedious and complex, requiring multiple processes to complete. These processes include selecting raw materials, making molds, making clay billets, decorating, firing and so on. Secondly, non-heritage traditional ceramic handicrafts require a very high level of skill from the artisans, including techniques, engraving and identification. In addition non-heritage traditional ceramic handicrafts are not only an art form, but

also an important part of traditional Chinese culture [2]. Each piece carries a rich history and cultural connotation, and is one of the important representatives of Chinese culture. Lastly, the non-heritage traditional ceramic handicraft has a long historical heritage, passed down from generation to generation, and it still maintains its unique style and traditional skills, as shown in Figure 1.

Figure 1: Pottery photo gallery.

2.2. Digital Design of Non-traditional Traditional Ceramic Handicrafts

Digital design can not only improve production efficiency, but also ensure the quality and consistency of the work. Digital design plays an important role in the following aspects. First, digital design can improve production efficiency, avoid manual errors and reduce waste. In the design and production process, we can use computer-aided design software to realize 3D modeling and rendering, which makes the design more accurate and realistic. Secondly, digital design can help designers achieve more innovative and unique designs, and through technologies such as 3D printing, more complex and exquisite shapes can be achieved [3]. In addition, digital design can improve artistic expression with rendering techniques and light and shadow effects, making the work more beautiful and exquisite. Finally, digital design can realize the protection and inheritance of non-heritage traditional ceramic handicrafts. Through digital design, the tradition can be carried forward and passed on to more people. Digital design can realize the digital archiving of non-heritage traditional ceramic crafts, recording and preserving the production process and design plan of each piece. These digital materials can be passed on to future generations, so that they can study and research, and promote the inheritance and development of non-heritage traditional ceramic crafts. In addition to this, digital design can also promote domestic and international cultural exchange, introduce Chinese traditional culture and non-heritage traditional ceramic crafts to more people, enhance cultural confidence, and promote cultural exchange and intermingling. In conclusion, digital design plays an important role in the protection and development of non-heritage traditional ceramic crafts [4]. Digital design can improve production efficiency, creative design, artistic expression and heritage protection, as well as promote domestic and international cultural exchange, ultimately realizing new ways and means of cultural inheritance and development.

3. Digital Conservation of Traditional Non-traditional Ceramic Handicrafts

3.1. Application of Digital Conservation Technology

Digital conservation technologies include digital photography, 3D scanning and virtual reality

technology. The application of digital conservation technology can not only help to preserve the cultural heritage of NRM traditional ceramic handicrafts, but also promote their transmission and development [5]. Digital photography is a relatively simple digital conservation technology. By photographing traditional ceramic handicrafts in high definition, it can record detailed information about their colors, patterns and forms, providing material for subsequent digital processing. Digital photography can also provide production reference and inspiration for ceramic artists, helping them to innovate on the basis of heritage and create more outstanding works. Three-dimensional scanning technology is a more advanced digital conservation technology. Through laser or photoelectric technology, ceramic works can be scanned in three dimensions to generate high-precision digital models. These digital models can be edited and restored on a computer, making the production and restoration of traditional ceramic crafts more efficient and accurate. At the same time, digital models can be displayed through virtual reality technology, allowing viewers to appreciate the beauty and detail of ceramic works up close in a virtual world. Virtual reality technology is a new digital conservation technology [6]. Through virtual reality technology, we can display the works of non-heritage traditional ceramic crafts on a digital platform, and then realize the interactivity and immersive experience of virtual reality scenes. Through virtual reality devices, viewers can feel the beauty and historical and cultural background of NLA traditional ceramic handicraft works up close, this digital conservation approach allows viewers to gain a deeper understanding and appreciation of NLA traditional ceramic handicraft.

3.2. Cultivation of Digital Protection Talents

Digital conservation technology requires professionals to implement and maintain it, so the cultivation of digital conservation talents is also very important. Digital conservation talents need to have professional knowledge and skills in ceramic handicrafts, as well as knowledge and application skills in digital technology [7]. Digital conservation talents need to be cultivated and learned through various aspects, including college education and practical experience. First, in colleges and higher education institutions, we need to establish interdisciplinary courses and research programs in digital conservation technology and ceramic crafts. Through education and training, we can cultivate a group of talents with expertise in digital conservation technology and ceramic handicrafts, which can provide technical and human resources for digital conservation of NRM traditional ceramic handicrafts. Secondly, in terms of continuing education, we need to conduct short-term training, lectures and workshops related to digital conservation techniques and ceramic handicrafts, which can provide relevant digital technology training for people who are already engaged in or interested in ceramic handicrafts [8]. These training courses can help ceramic handicraft practitioners understand the basic principles and application methods of digital conservation technology, and improve their ability to apply digital conservation technology. Finally, in terms of practice, we need to establish practice bases and laboratories for digital conservation technology and ceramic handicrafts. Through practice and experiments, which can allow digital conservation talents to apply their theoretical knowledge learned to practical operations, to master the practical operations and skills of digital conservation technology. At the same time, the practice bases and laboratories can also provide digital conservation technology services to ceramic handicraft practitioners, as well as to help them digitally conserve and restore their works [9].

4. Digital Dissemination of Traditional Non-traditional Ceramic Handicrafts

4.1. Application of Three-dimensional Technology to Achieve Interactive Dissemination

In today's highly developed information technology society, the combination of traditional

ceramic handicrafts and modern technology, which can achieve interactive communication, and then innovate more forms of expression and inheritance [11]. First, 3D technology is an advanced digital technology, which can quickly and efficiently transform ceramic handicrafts into digital models, so as to achieve a more intuitive and vivid display and communication. For example, we can convert traditional ceramic handicrafts into digital models through 3D scanning technology, and then through 3D printing technology, the digital models can be transformed into solid models, so that ceramic handicrafts can be better displayed and communicated in different scenes and environments [12]. At the same time, through three-dimensional technology, interactive experience can also be realized. For example, we can display the digital model on VR glasses through virtual reality technology, so that the audience can personally feel the details and charm of the handicraft. Finally, we can also embed the digital model into the cell phone APP, so that the audience can understand and learn the traditional ceramic handicraft more easily through interactive games and other means. The application of 3D technology can not only innovate the expression and inheritance of traditional ceramic handicrafts, but also improve the audience's knowledge and understanding of ceramic handicrafts, and promote the inheritance and development of non-heritage culture. In addition, the application of 3D technology helps to improve the conservation and transmission of ceramic handicrafts [13]. This is because through digital technology, we can achieve accurate reproduction and backup of ceramic handicrafts, and as a way to reduce the loss and damage of handicrafts. In conclusion, the combination of traditional ceramic handicrafts and 3D technology, this can inject new impetus to the inheritance and development of non-heritage culture, provide better learning and interactive experience for the audience, which can also provide better protection for the preservation and inheritance of traditional ceramic handicrafts. Therefore, relevant personnel should actively promote and apply 3D technology, and then carry forward the traditional ceramic handicraft and inherit, and promote the non-heritage culture [14].

4.2. Online and Offline Interactive Communication Methods

With the popularity and development of the Internet, more and more traditional non-heritage cultures have started to flood into the online world. As one of the representatives of Chinese traditional non-heritage culture, ceramic handicrafts have also started to have more exploration and practice in the way of online and offline interactive communication. First of all, the offline dissemination of traditional non-heritage ceramic handicrafts mainly relies on exhibitions, sales and training [15]. Among them, exhibition is the most common way. Through exhibitions, people can learn more intuitively about the historical origin, skillfulness and cultural connotation of traditional non-heritage ceramic crafts. At the same time, exhibition is also one of the important ways for traditional non-heritage ceramic crafts to go international. In addition to exhibitions, the exhibition and sale of traditional non-heritage ceramic crafts is also a very effective way of offline communication. Through exhibition and sale, not only can more people understand and buy traditional non-heritage ceramic handicrafts, but also can bring more economic benefits to traditional craftsmen. In the exhibition and sale activities, we can set up handmade site and interactive experience area, etc., so that participants can experience the charm of traditional non-heritage ceramic handicrafts first-hand. In addition, training of traditional non-heritage ceramic handicrafts is also a very important way to spread offline. By teaching the skills and experience of ceramic handicraft, which can make more people understand and master the core value and skill essence of traditional non-heritage culture. Moreover, the inheritance of ceramic handicrafts requires long-term accumulation and practice, and through training more young people can join the inheritance team of traditional non-heritage ceramic handicrafts. Second, with the continuous development of Internet technology, more and more traditional non-heritage ceramic handicrafts

have started to flood the online world. Among them, online interactive communication methods mainly include webcasting, short video, and WeChat public number, etc. Webcasting is a very popular online interactive communication method. Through webcasting, more viewers can understand the production process and the essence of traditional non-heritage ceramic handicraft techniques. At the same time, lotteries and interactive quizzes can be set up in the live broadcast to enhance audience participation and interactivity. In addition, short video is also a very popular way of online interactive communication [16]. Through short videos, we can combine the production process and cultural connotation of traditional non-heritage ceramic crafts, and then present them to the audience in a vivid and interesting way. Short videos are short and simple to produce, so they are more likely to attract viewers' attention and sharing. WeChat public number is also a very common way of online interactive communication. Through the WeChat public number, we can convey the knowledge of the historical origin and cultural connotation of traditional non-heritage ceramic crafts to more people. The public number can be set up with interactive quiz and subscription push functions, which can make it easier for viewers to understand and follow the latest information and developments of traditional non-heritage ceramic crafts. In addition, for traditional non-heritage ceramic handicrafts, we can also sell and promote them online through online shopping mall and social media. Through the online mall, we can let more people understand and buy traditional non-heritage ceramic handicrafts, and also bring more economic benefits to traditional craftsmen. Social media can combine the knowledge of the cultural connotation and historical origin of traditional non-heritage ceramic handicrafts, and then present them to the audience in a more relaxed and interesting way, thus enhancing the audience's participation and interactivity. Overall, the online and offline interactive communication methods are very important. Through the combination of various communication methods, we can let more people understand and know the traditional non-heritage ceramic crafts, and then promote the inheritance and development of traditional culture. In the future development, relevant personnel can also continue to explore and try more interactive communication methods, so that the traditional non-heritage ceramic handicrafts to a broader development space [17].

4.3. Interactive Game Form Dissemination Method

Traditional non-heritage ceramic handicrafts can be disseminated through the form of interactive games, which can not only enhance the audience's participation and interactivity, but also let the audience understand the production process and cultural connotation of traditional non-heritage ceramic handicrafts more deeply. First of all, relevant personnel can develop some interactive ceramic handicraft making games. In these games, players can simulate the process of making traditional non-heritage ceramic handicrafts, and understand the operation steps and technical points of each step. The games can be designed with multiple levels, each of which gradually increases in difficulty, allowing players to gradually improve their skills. The game can also set up a scoring and ranking system, so that players can compete with other players in terms of skills and achievements. Secondly, relevant personnel can also develop some cultural knowledge quiz games. These games are mainly designed around the knowledge of the historical origin and cultural connotation of traditional non-heritage ceramic handicrafts. In addition, relevant personnel can also develop some ceramic cultural creative games [18]. These games are mainly by combining traditional non-heritage ceramic handicrafts with modern game elements, and then designing some creative and interesting games. For example, we can design a ceramic puzzle game that allows players to restore a complete ceramic work by putting together ceramic pieces, or a ceramic flight game that allows players to travel through the time tunnel of history and culture by controlling a ceramic flying machine. In addition to the above game forms, other interactive games, such as action games,

puzzle games, and simulation games, which allow players to understand and explore the endless charm of traditional non-heritage ceramic crafts in the game. In general, interactive games are a very creative and interesting way to communicate. By designing different types of games, more people can be attracted to understand and pay attention to traditional non-heritage ceramic culture.

5. Interactive Game Form Dissemination Method

5.1. Digital Conservation and Dissemination of Non-Heritage Ceramic Crafts in Sanfang Qixiang

Fuzhou Sanfang Qi Xiang is a cultural district with a long history, and is also an important birthplace of intangible cultural heritage in Fuzhou. Among them, Sanfang Qi Xiang intangible ceramic handicrafts, as one of the important features of the area, which has rich historical and cultural connotations and artistic values. In order to protect and inherit this intangible cultural heritage, Sanfang Qixiang has made use of digital technology for protection and dissemination. First of all, Sanfang Qixiang has transformed the non-heritage ceramic handicrafts into digital models through 3D scanning technology, which realizes the digital preservation of the non-heritage culture. These digital models can not only be saved in digital storage devices, but also be displayed and disseminated on the digital platform. Using digital exhibition halls and digital demonstrations, ceramic handicrafts can be displayed on the digital platform so that viewers can view, understand and learn about the non-heritage culture up close in a virtual environment. Secondly, Three Square Seven Lane also makes use of virtual reality technology and interactive games and other means, which can display digital ceramic handicrafts on the digital platform [19]. Through virtual reality technology, the audience can understand and experience the charm of non-heritage culture in a more intuitive way. At the same time, using interactive games and other means, the audience can have a deeper understanding of the skills and historical and cultural connotations of non-heritage ceramic handicrafts through interactive experiences. In addition, Three Square Seven Lane also promotes digital ceramic handicrafts to more people through cell phone APP and other means, which improves the visibility and influence of the non-heritage culture. Visitors can learn about and study the non-heritage culture anytime and anywhere through the mobile phone APP, and at the same time, they can purchase the non-heritage ceramic handicrafts on the APP, which promotes the inheritance and development of the non-heritage culture, as shown in Figure 2.

Figure 2: Pottery artwork.

5.2. Digital Dissemination Project of Non-heritage Ceramic Handicrafts in Lianhua Town, Qingyang City

Lianhua Town in Qingyang City is a tourist destination featuring non-heritage ceramic

handicrafts. In order to protect and inherit this non-heritage culture, the government of Lianhua Town invested in the construction of the digital dissemination project of non-heritage ceramic handicrafts, using digital technology to protect and disseminate ceramic handicrafts [20]. Firstly, Lotus Town in Qingyang City uses 3D scanning technology to transform the non-heritage ceramic handicrafts into digital models. This technology can quickly transform physical relics into digital forms, making the traditional handicrafts digitally preserved and improving their conservation effect. Second, Lotus Town displays ceramic handicrafts on a digital platform through digital exhibition halls and digital demonstrations. The digital exhibition hall provides a more convenient way of displaying, which is not restricted by time and space and can be exhibited and viewed anywhere and anytime. The digital demonstration, on the other hand, enables the audience to understand and experience the charm of the non-heritage ceramic handicrafts more intuitively through various means, such as video and audio, which enhances the effect of spreading the non-heritage culture. Finally, Lotus Town in Qingyang City also promotes digital ceramic handicrafts to the Internet, using channels such as e-commerce platforms and social media. Through the e-commerce platform, viewers can purchase and learn about the non-heritage ceramic handicrafts online, allowing more people to access and enjoy this cultural heritage. Through social media, we can spread more widely, so that more people can understand and pay attention to the cultural value of non-heritage ceramic handicrafts, and at the same time promote the inheritance of non-heritage culture. In conclusion, the digital dissemination project of NRM ceramic handicrafts in Lianhua Town, Qingyang City, which has realized the protection and inheritance of NRM culture through digital means.

6. Conclusion

In conclusion, digital technology has brought a profound impact on the conservation and dissemination of non-heritage traditional ceramic handicrafts. Digital protection and dissemination not only allows cultural heritage to be better preserved and inherited, this also provides new ideas and methods for upgrading and innovation of ceramic handicrafts. In the future development, we hope that digital technology can make a greater contribution to the preservation and transmission of non-heritage culture.

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