

Research on the Innovation Path of Cultural and Creative Products Based on Digital Technology

Fei He

School of Design and Art, Jingdezhen Ceramic University, Jingdezhen, 333403, China

Abstract: This study aims to explore the application of digital technology in the design of cultural and creative products in Jingdezhen red venues, analyze the design status of cultural and creative products in Jingdezhen red venues, reveal the types and characteristics of existing products, and identify the existing problems and challenges. For Jingdezhen red venues and product market positioning and marketing strategy to provide theoretical support and practical guidance, in order to the red culture resources inheritance and innovation provide new ideas and methods, at the same time for Jingdezhen and even the national product market inject new vitality, to promote the dual goal of cultural inheritance and economic benefits.

Keywords: Digital technology; red venues; cultural and creative products; innovation path.

1. Foreword

Jingdezhen, as the birthplace of Chinese ceramic culture, has rich red cultural resources, which are not only the witness of history, but also an important carrier of cultural inheritance and innovation. However, with the development of The Times, the traditional wen gen product design method has been difficult to meet the needs of modern consumers, especially in the digital technology increasingly mature today, how to put the red culture resources combined with modern science and technology, create in line with the trend of The Times and products, become the Jingdezhen red venues.

2. Jingdezhen Red Venue Overview

2.1. Definition and historical value of red venues

As an important place to carry the Chinese revolutionary history and red culture, the red venue is not only a witness of history, but also a inheritor of the red spirit. They usually refer to museums, memorials, exhibition halls, and related to revolutionary historical events, revolutionary heroes, important revolutionary activities, or sites of significant historical significance. Jingdezhen, as the holy land of Chinese ceramic art, is not only famous for its reputation as the porcelain capital for thousands of years, but also carries rich red cultural resources. According to incomplete statistics, Jingdezhen, as an old revolutionary base area, has a large number of red memorial halls and red scenic spots, and these red venues witness the important moments in the history of the Chinese revolution. Such as: red army building site, Jiangxi northeast revolutionary committee site, the new fourth army yao adaptation site, cheng in the site, in dock square ambition the min, fu liang revolutionary martyrs cemetery, jiang xun revolutionary martyrs memorial hall, the communist party floating liang county site, the county wu center memorial hall, yao in Chen yis former residence, the revolutionary martyrs monument, etc. These venues record the revolutionary course under the leadership of the Communist Party of China, and witness the heroic struggle and great sacrifice of countless revolutionary martyrs. They are important bases for red culture and education, and also an important window for the study of Chinas revolutionary

history and red culture.

2.2. Market status and challenges of cultural and creative products of Jingdezhen Red venues

There are still many challenges in the design, marketing and brand building of the cultural and creative products. For example, problems such as serious product homogenization, lack of innovative design and insufficient marketing efforts lead to consumers low awareness and desire to buy cultural and creative products of red venues. In this regard, some scholars pointed out that the cultural and creative products of Red venues need to be "driven by innovation and culture as the soul", and promote the innovation of product design through the integration and application of digital technology, so as to enhance the market competitiveness.

Under the impact of the digital wave, Jingdezhen red venue cultural and creative products are facing unprecedented challenges and opportunities. On the one hand, with the rapid development of Internet technology, consumers demand for cultural products is increasingly diversified. They are no longer satisfied with the traditional visiting experience, but pursue more interactive and personalized cultural consumption modes. The application of digital technology provides a new path for the innovation of cultural and creative products in red venues. For example, virtual reality (VR) and the application of augmented reality (AR) technology, makes the red venues through immersive experience let visitors more vivid experience history, in addition, the introduction of 3D printing technology, makes the red cultural elements can be more flexibly applied to the product design and production, so as to create a unique cultural souvenirs. The application of big data analysis helps to better understand consumer needs and provide data support for product design, so as to improve the market adaptability and user satisfaction of products.

In the face of challenges and opportunities, the implementation strategy of red venue cultural and creative product design innovation is particularly important. The path of cross-border cooperation and multidisciplinary integration, such as the cooperation with technology companies and design colleges, can bring new design concepts and technological innovation to the cultural and creative products of red venues. The long-term planning of continuous

innovation and brand building is the key to ensure that the cultural and creative products of red venues maintain their vitality and attraction in the fierce market competition. Only the continuous innovation of cultural and creative products can brave the waves in the digital wave and inherit and carry forward the red culture.

3. Overview of the Digital Technology

Digital technology, as the core driving force of the information age, is profoundly changing the design path of cultural and creative products. It not only includes basic digital information processing technologies, such as computer programming, database management, but also covers more cutting-edge fields, such as artificial intelligence, big data analysis, virtual reality (VR), augmented reality (AR) and 3D printing technology. The integrated application of these technologies provides infinite possibilities for the innovative design of red cultural products. Through big data analysis, designers can accurately capture consumers preferences and behavior patterns, so as to design red cultural products more in line with market demand. At the same time, the application of AR and VR technology makes the visiting experience of red venues more vivid and interactive. Users can experience historical events in a virtual way, so as to deepen their understanding and identification of red culture. The application of virtual reality (VR) and augmented reality (AR) technology enables visitors to red venues to experience historical scenes and cultural stories more vividly through immersive experience. According to market research institutions, the global VR market is worth \$7 billion in 2020 and is expected to grow at an average annual rate of 18.4% to 2027. This data shows that the application of digital technology in the cultural and creative industry is increasingly becoming a key force to promote the development of the industry

Another important application of digital technology is 3D printing technology, which provides the possibility for the personalization and customization of cultural and creative products. With 3D printing, designers can quickly translate ideas into physical products, greatly shortening the time from design to market. Through 3D printing technology, rapid iteration and on-demand production can be realized, meeting the needs of consumers for uniqueness and personalization. In addition, the application of big data analysis in cultural and creative product design makes product development more accurately meet market demand, and designs products more in line with market trends.

Under the promotion of digital technology, the innovative design thinking of cultural and creative industry has also been cultivated and practiced. The user-centered design method, combined with digital technology, enables red cultural products to better resonate with modern consumers. Through social media and mobile apps, the red venue can interact with the public and collect feedback to continuously optimize product design. This user-centered design method not only improves the user experience, but also enhances the transmission power and influence of red culture. Digital technology promotes the process of red culture innovation by changing the operation mode of cultural and creative products.

4. Application of Digital Technology in The Design of Cultural and Creative Products in Jingdezhen Red Venues

4.1. Application of Virtual reality (VR) and augmented reality (AR) technology

Driven by the wave of digitalization, the innovative design path of cultural and creative products of Jingdezhen Red venues is ushering in unprecedented changes. The application of virtual reality (VR) and augmented reality (AR) technology provides a new perspective and experience way for the inheritance and innovation of red culture. For example, through VR technology, visitors can experience the occurrence of historical events, such as being in the difficult course of the Long March, or experiencing the heroic struggle of revolutionary martyrs. This immersive experience greatly enhances the transmission and appeal of red culture. According to the White Paper on Chinas Virtual Reality Industry, Chinas VR market has exceeded the 10 billion yuan mark in 2020, and is expected to maintain rapid growth in the next few years. This shows that the application of VR and AR technology in the cultural and creative products of red venues has huge market potential and broad development prospects.

AR technology provides visitors with a more intuitive and interactive experience by superimposing digital information in the real world. For example, through the AR app, users can scan the exhibits in the red venue, thus triggering historical stories, audio commentary or video materials related to the exhibits, making the static exhibits vivid and interactive. The application of this technology not only improves the quality of the visitors experience, but also makes the education and dissemination of red culture more vivid and effective. Internationally, the "Museum in pocket" application launched by the British Museum using AR technology has proved the great potential of AR technology in enhancing cultural experience.

In designing innovative paths, Jingdezhen red venues should make full use of the characteristics of VR and AR technology, and combine the red cultural content to develop educational and recreational products. For example, a VR game can be designed to allow players to complete a series of tasks related to Jingdezhen red history in a virtual environment, so as to learn and experience red culture in entertainment. At the same time, through AR technology, the exhibition content of the red venue can be digitized, so that visitors can learn and explore anytime and anywhere through mobile devices such as mobile phones or tablet computers. We can also use digital scanning and modeling technology to restore the red landmarks and buildings in Jingdezhen with high precision, and combine the historical events and the story plot of the characters, to design a series of fascinating VR experience scenes. Users can personally experience the charm of red culture by wearing VR devices. This new experience method will greatly enhance VR users sense of participation and satisfaction. This combination of technology and content can not only attract the younger generation, but also inject new vitality into the spread of red culture.

4.2. Innovative practice of 3 D printing technology in cultural and creative products

With the rapid development of digital technology, 3D printing technology is increasingly widely used in the design

of cultural and creative products, providing new possibilities for the innovation of red culture. 3D printing technology, also known as additive manufacturing technology, builds three-dimensional solid models by accumulating materials layer by layer. This process not only shortens the product cycle from design to production, but also allows designers to realize complex structures and personalized customization that are difficult to complete with traditional manufacturing technology. The Jingdezhen Red Venue can use 3D printing technology to restore historical relics, and by accurately copying every detail, visitors can feel the thickness of history up close. In addition, 3D printing technology can also customize personalized cultural and creative products belonging to each red venue according to consumer needs, such as red-themed souvenirs and decorations, so as to enhance the added value and market competitiveness of the products.

Under the wave of digitalization, the innovative practice of 3D printing technology is not only reflected in the individuation and diversification of product design, but also reflected in its profound influence on the inheritance of red culture. In several red venues in Jingdezhen, 3D printing technology can be used to reduce the weapons of the revolutionary period. These replicas are not only used for exhibition, but also used as educational tools, allowing the younger generation to have a more intuitive understanding of history. 3D printing technology can also be used to combine red cultural elements with Jingdezhen ceramic technology to create a series of cultural and creative products with the characteristics of The Times. These products not only retain the aesthetic value of traditional ceramics, but also realize the personalized customization through digital means, to meet the personalized needs of modern consumers. Through this innovative design, the integration of red culture and modern science and technology opens up a new path for the inheritance and development of traditional culture.

As Steve Jobs said, "Technology itself is not enough to change the world, but the combination of technology and humanity can be." The combination of 3D printing technology and red culture is a model of the combination of technology and cultural inheritance. It not only retains the original appearance of red culture, but also gives it new vitality.

The application of 3D printing technology in cultural and creative products can be established through a cooperation mechanism to jointly develop new materials with scientific research institutions and universities to reduce costs and improve printing quality. Through these measures, the innovative practice of 3D printing technology in the design of cultural and creative products in the red venues will be more mature and sustainable, opening up a new path for the inheritance and innovation of the red culture.

4.3. The Role of big data analysis in the design of cultural and creative products

Driven by the wave of digitalization, the design path of cultural and creative products of red venues is undergoing unprecedented changes. Big data analysis plays a crucial role

in this process. It can not only reveal the deep pattern of consumer behavior, but also provide data support for the innovation of cultural and creative products. By digging deeper into historical sales data, user feedback, social media trends and other information, designers can gain insight into which red cultural elements are favored by the market and which design directions can resonate with the public. By constructing user portraits, the preferences of users of different ages, genders and regions for red cultural products are analyzed, so as to design products that more meet the needs of target groups. In the design of cultural and creative products, big data analysis can help designers to extract valuable design inspiration from massive information and realize the innovative inheritance of red culture.

5. Summary

The design innovation of cultural and creative products of Jingdezhen red venues should keep up with the development trend of digital technology, combine local cultural characteristics and modern design concept, and constantly promote product innovation and brand building through accurate market positioning and innovative marketing strategy. In the future, the cultural and creative products of Jingdezhen red venues are expected to become an important carrier for inheriting the red culture and carrying forward the national spirit, and occupy a place in the cultural consumption market.

Acknowledgements

Project Name: 2023 Jingdezhen City Social Sciences Planning Project "Research on Cultural and Creative Product Design of Jingdezhen Red Venues under Digital Empowerment"

Project Number:2023015

References

- [1] Song Xiaole. Discussion on the Digital Construction and Practice Path of the Palace Museum under the background of "Internet +" (J). Sound screen world. 2021(04).
- [2] Wang Hui. Research on the digital development and innovation path of red Cultural and creative products in the Revolutionary Memorial Hall (J). culture industry. 2022(05).
- [3] Interaction, Immersion and Internalization _ Survey on the Current Situation of Digital Development and Utilization of Cultural Resources in Shanghai Red Venue (J). Zhao Lina. The Jingchu Academic Journal. 2021(12).
- [4] Niu Zhengkai. Research on digital development Strategy of Red Cultural and creative products in western Sichuan (J). culture industry. 2022(06).
- [5] Gao Wenyu. Digital Design and Promotion of cultural and creative products of northeast Anti-Japanese War (J). art education. 2019(06).
- [6] Hu Weiping, Thoughts on the Digital construction of Jiangxi Provincial Financial Media Museum (J). Construction of the old base areas. 2020(24).