

Research on the Reproduction and Dissemination of Dayu Cultural Heritage Art Driven by Digital Technology

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Abstract

By piecing together digital technology and the cultural heritage of Dayu, and incorporating these fresh ideas into the new situations that arise when showcasing Dayu culture through digital means, we carefully consider the enormous significance of dissemination through media such as social media and metaverse platforms. We explore the internal reasons why digital technology breaks through the constraints of traditional media and once again changes the expression and interaction methods of cultural heritage. We identify some basic rules formed after the advancement of technology in the process of traditional cultural dissemination, and find solutions to the cultural changes and ethical problems that arise when digital technology is applied, providing theoretical support for the digitization of traditional culture.

Keywords

Digital technology; Dayu's legacy; Artistic reproduction; Cultural inheritance; digital transformation

1. The Connotation Characteristics and Inheritance Difficulties of Dayu Cultural Heritage

1.1. Exploration of the Spiritual Connotation and Carrier of Dayu Culture

In the history of the Chinese nation, Dayu, who successfully controlled floods and created the first slave dynasty in Chinese history, has been revered and admired by the Chinese people for thousands of years, and has had a sustained influence and vitality in traditional Chinese culture. The meaning of Da Yu culture itself is to control floods and help the world. Da Yu culture is the national wisdom and spirit of China. Yu was divided into nine provinces. In the Book of Documents, Yu Gong wrote, "Yu laid the soil and planted trees along the mountains." The story of Da Yu's flood control in the Records of the Grand Historian has shaped a selfless, honest and upright

image of him. Many Chinese Yu temples, Yu ruins steles, Zhejiang Shaoxing Yu Mausoleum, Sichuan Yu Palace, and other places are all carriers of Da Yu culture. There are also sacrificial activities of Da Yu, which are national level, including national Da Yu sacrificial rituals, local temple fairs, and some others. Folk stories such as "The Divine Axe Opened the Dragon Gate" and "King Yu Locks the Dragon". All of them have gone down the path of cultural inheritance. The situation presented in this example, where Dayu did not enter his home three times, seems to be like Dayu's collective thinking, like Dayu himself created. These measurement methods also want to do something in the field of water conservancy, such as implementing various administrative systems. In the process of advancing social civilization, this is a particularly critical position. Comparing it with our current operation and management system model is like making a reference for learning.

1.2. Limitations of Traditional Inheritance Models

All along, it has only been about using words to spread, to record, to leave something behind, and to do some folk activities to spread the story of Dayu. The most famous ones should be the "Book of Documents" and "Records of the Grand Historian". The ones mentioned about Dayu in the previous sections are written in detail, but when you read them, you feel that the words are a bit outdated and boring. Another thing is that there are some things about Dayu in local chronicles, which are written one by one to provide materials for you to find something to do, or to find some knowledge you want to do. For those who want to learn some knowledge, creating something to study is not necessarily for everyone to know, not for everyone to know, Not for everyone, nor for everyone to know about this matter. Cultural relics and historical sites are a fixed tool for promotion. When we talk about Zhejiang, such as the Great Yu Mausoleum in Zhejiang and the Great Yu Palace in Sichuan, there is a fixed place. There is indeed a place that exists, and it is only in this place or in the children of this place that they will have this feeling, and it will not spread so far. It is only in this place, this place, that this feeling exists. However, if the story of Dayu is passed down from generation to generation through word of mouth, one will definitely follow the storytellers, because every dialect is different, and it will be distorted from generation to generation, and in the end, it may really be lost. Traditional artistic styles and images can be expressed, but they do not fully represent the culture of Dayu. In traditional Chinese opera, there are also many martial arts scenes depicting Dayu's flood control, and the contradictions in the drama are also very attractive. For example, Dayu's wisdom in flood control and his people-oriented ideology cannot be well expressed in his flood control paintings due to the fixed painting techniques and spatial limitations of Dayu's paintings. This kind of rigid inheritance has become a dilemma for the Dayu culture in today's fast-paced and fragmented era of young people's lives.

2. The Artistic Reproduction Path Driven by Digital Technology

Research on the Application of 3D Modeling and Digital Twin Technology in Historical Scene Reconstruction

Digital creation relies on methods such as laser scanning and photogrammetry. To protect the passed down Dayu culture, new places will emerge. For example, the stone carvings in the Dayu Mausoleum scenic area of Shaoxing, as well as the faded paintings on the eaves of the Yu Temple, can be scanned with a laser scanning device to capture all the subtle features on their surfaces, and immediately obtain very accurate three-dimensional digital copies. The text related to water control left on the copper vessels is many high-definition photos taken from many different angles, and it also needs to be matched with spectral imaging to generate three-dimensional text that is very close to the real scene reproduction, even if it is... The very small lines can also be seen clearly.

By using GIS technology, the Yu relics in the Yellow River Basin and Yangtze River Basin in the digital Yu ruins virtual map are gathered together, creating cultural connections across time and space. Users can walk freely on the virtual points on the screen, looking at whichever one they want to see. Important Yu relics such as the Qimu Que in Dengfeng, Henan and the Yu Palace in Wenchuan, Sichuan, as well as their changes in location, can be walked freely on the screen as if they were in the scene of Yu the Great's flood control. It is like dismantling ancient buildings, like dismantling the mortise and tenon structure of ancient buildings, which can reflect the effect of traditional craftsmanship and achieve the goal of better management of cultural relics resources than before. The digital traces of Yu have awakened everyone's interest in Yu the Great, bringing new insights to the dissemination of Chinese civilization. In response to the problems of large scale, complex process flow, fragmented information, and labor shortage in large-scale construction projects in China, new challenges have been posed to traditional project management methods, and there is an urgent need to digitize project management. Digital twins are an important way to achieve this goal.

2.1. Immersive technology shapes a new paradigm of cultural experience

VRAR shattered the previous presentation in time and space, adding another tool to promote the culture of Dayu. Wearing VR glasses is like returning to the turbulent Yangtze River, seeing the murky waves rolling, the wind and rain mixed, seeing many people seeking help from Dayu, seeing Dayu holding a measuring line and ruler to measure the river surface in front of Dayu's eyes, seeing everyone uniting together when building dams, seeing the scene of feudal lords bringing jade and silk to worship Dayu after flood control, and seeing the scene of the common development of the Chinese nation after flood control.

Augmented reality technology gradually blurs the boundaries between reality and virtuality, and the exhibition area of Dayu culture in museums has a more innovative

way of expression. When tourists scan the Yuyu trace map, the golden river planning line climbs to the ground, and they will also see a little bit of water control tools such as wooden plows and stone axes floating on it. With the 3D animation display, the scene of Dayu's water control in the past emerges from the front of their eyes. Approaching the model of the Yu Temple, the structural diagram is analyzed and stacked, and the mechanical principles between the mortise and tenon structures are analyzed and analyzed. This immersive communication method turns those virtualized cultural symbols into concrete objects that can be communicated. The audience is no longer passively receiving simple messages, but is immersed in interaction, and the spirit of Dayu also emerges. It spread to the largest extent on this digital platform.

2.2. Intelligent Creation: Activating Cultural Symbols

As a strategic technology leading the new round of technological revolution and industrial transformation, artificial intelligence (AI) has broad application scenarios and huge market space, profoundly changing the way humans produce and live. Artificial intelligence technology has brought new impetus to the cultural innovation of Dayu. Artificial intelligence will use machine learning algorithms to quickly find some traditional materials, such as opera masks, mural rubbings, ancient book illustrations, etc., to identify the main image elements of Dayu, such as bamboo hats, plows, water ripples, mountain and river patterns that express the wisdom of flood control. With AI painting technology, artists will naturally transform traditional culture into modern language. Using GAN algorithm, traditional ink painting skills are combined with cyberpunk light and shadow effects to create a digital portrait of Dayu with a touch of ancient style and future. Here, The AI image generation function will display a dynamic "Yu Ji Qi Jing", and those things in the past will become popular stars, shining crystals and other popular symbols, giving new life and image to traditional culture. It's a narrative level approach, where we put complex narratives like flood control into a pile of books like "Records of the Grand Historian". We use this method to create a natural language processing method to break it down, and then rearrange it into a new structure. We take out a face that still looks impressive now, and create a tight but still somewhat flavorful skeleton of a novel. Whether it's using it as an animation storyboard or creating an immersive theatrical dialogue, this way, our ancient mythological stories can be more easily accepted by children today, and we can spread the culture of Dayu even further. The sentence is.

3. Digital technology innovation, cultural dissemination ecology

3.1. New Media Matrix: Achieving Accurate Communication Results

Short video platforms, in the era of digital media, small platforms such as Tiktok and Kwai have become the headquarters of Dayu's cultural transmission. The creators use digital technology to retell the history, with exaggerated camera segments, ab-

surd commentaries, and the hottest songs of the moment, turning some old things into the favorite meals of young people today. The empowerment of digital technology has given rise to a participatory communication paradigm, characterized by high participation of community members, self media content production, structured evolution of virtual communities, and innovation in community economic paradigms. In videos like 'Dayu Black Technology', there is an animation where an ancient measuring instrument is placed and it starts moving. The wisdom of ancient people is strong, and by saying 'the wisdom of ancient people is strong', it directly increases by one to two hundred thousand yuan.

WeChat official account, microblog and the like need to create a community atmosphere by connotation. After the topic of looking for Yuji around emerged, someone took photos of Yuji Temple and Yubei at home as photos and posted them online, and then vigorously publicized these important knowledge with pictures and words. In this way, friends who like culture may have an interest in participating. Xiaohongshu is constantly emerging based on the evaluation of many Dayu's cultural and creative products, Yuji's card printing strategies and many other contents. In this environment, the spread of culture has changed from one-way to mass communication in the process of two-way flow, bringing Dayu Important cultural information is embedded into short video topic interaction, cultural and creative product promotion and other communication paths, so that culture can be more easily spread.

3.2. Research on the Construction of Cultural Community on Metaverse Platform

The metaverse technology has added a virtual Yu Temple to the culture of Yu the Great. Users bring their digital avatars to the temple to worship and kneel down to pay respects. In this virtual world built around the theme of "Yu the Great's Water Control", they explore the problems encountered during Yu the Great's water control with other players, and experience traditional culture through playing games. This highly interactive and community-based support has long expanded the geographical scope of cultural dissemination, and players from all over the world can join the game to create new cultural collectives.

4. Challenges and coping strategies under technological empowerment

4.1. Cultural distortion risk and content control

The more digital technology is applied, the more likely it is to lead to cultural alienation. The strange and bizarre parts in the myth of water control are overemphasized purely for visual shock. In addition, some works belonging to the artificial intelligence category need to work together across disciplines to find those who engage in research in the fields of history and culture. When searching for those who are engaged in the corresponding categories, the technical elements and cultural connota-

tions included in the creation of digital content are included in the field of vision, thus establishing a system and mechanism for judging the digital reproduction. This is an indispensable and important part of it. It is necessary to determine whether the past events are true or false, and the overall level of artistic creation of the entire work, Various factors such as whether there are any cultural aspects worth paying attention to should be included in the workflow of deconstruction and understanding.

4.2. Prevention of Ethical and Safety Issues

When it comes to digital transformation, there are loopholes in data security, personal privacy, and virtual behavior. The metaverse is a fake world, and the path taken here may be abused by criminals. If such activities are held here without rules, there may be cultural clashes or moral collisions. To create a complete protection system, we should start from small things, use technology and system to write all digital cultural rules on the blockchain while managing the local behavior. This can draw a moral boundary for the spread of culture and treat cultural matters well.

5. Conclusion

Digital technology has brought new solutions to the artistic expression and transmission of the cultural heritage of Dayu. It is important to link digital technology with culture. By following the routine of digital technology and changing the previous format of transmission, this interactive immersive cultural experience system has been developed. The film "Dayu's Flood Control" uses precise CG special effects technology to vividly reproduce the scenes of the ancient people's flood control. In the game, "Yuji" also uses motion capture technology to make these ancient people's flood control deeds very clear, and then uses motion sensing equipment to let you feel the different experiences when you do it yourself. The "Yu's Journey to Kyushu" cultural and tourism project relies on 5G and VR. The technology creates a particularly realistic gaming environment, as if it were "right there in the real place where Yu controlled the floods".

Technological empowerment has become a mixture of cultural core, ethical boundaries, and transmission efficiency. Its visual effects may lead to cultural bias, and algorithmic control of information selection will certainly be more profound and narrow than transmission. In the future, when the pixel universe and brain computers enter this technological frontier and continue to move forward, the digital reconstruction of Dayu culture will probably become a main channel for its survival and continuation. This intertwined virtual and real cultural ecological environment will fuel the inheritance of national spirit.

References

- [1] Xiao Yan, Luo Ying A Study on the Cultural Symbols of Dayu in terms of Perspective and Spatial Narrative [J]. Journal of Literature and History, 2025, (01):69-74.
- [2] Li Xinxin, Zhang Ran, Yuan Xinjie Research on Digitalization of Construction Project

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- Management Based on Digital Twins [J]. Residential and Real Estate, 2025, (02):19-21.
- [3] Guo Jingyuan Accelerated Expansion of Artificial Intelligence Application Scenarios [N]. Economic Daily, July 3, 2025 (001)
- [4] Liu Yunhui The Communication Logic and Social Effects of Specific Community Cultures in the New Media Environment [J]. Communication and Copyright, 2025, (12):70-73.DOI:10.16852/j.cnki.45-1390/g2.2025.12.018.
- [5] Li Si, Wan Changlin Research on Marketing Mode Innovation of Intangible Cultural Heritage Industry in the Internet Era [J]. Guangdong Economy, 2025, (09):49-52.