

Research on the Role of Digital Art in Cultural Inheritance and Innovation Based on the Philosophy of New Media Technology

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Abstract: Digital art, as a core derivative of new media technology, is reconstructing the paradigm of cultural inheritance and innovation based on its digitization, interactivity, and virtuality, and has become a key carrier for the empowerment of cultural strategy in the context of globalization. Based on the perspective of Philosophy of New Media Technology, this study analyzes the intrinsic connection between digital art and cultural inheritance and innovation. By explaining the characteristics of digital art and the connotation of Philosophy of New Media Technology, the study reveals its multiple roles in cultural inheritance and innovation. During the research process, a large amount of empirical data and classical theories are used, such as citing the communication data of Henan TV's "Tang Palace Night Banquet" and Walter Benjamin's theory of "aura fading", etc., to enhance the persuasive power of the argument. Given the technical ethics and legal challenges faced by digital art, practical response strategies are proposed to provide solid theoretical support and practical guidance for digital art to promote the development of cultural prosperity.

Keywords: Philosophy of New Media Technology (PNMT); Digital art; Cultural heritage; Cultural innovation

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1. Introduction

With the exponential development of information technology, new media technology has penetrated all levels of society, profoundly changing human life, working mode, and thinking structure. As the crystallization of the in-depth integration of new media technology and art, digital art, with its unique forms of expression and dissemination paths, has demonstrated its inestimable value in the process of cultural inheritance and innovation. Examining digital art from the perspective of the philosophy of new media technology can help people gain a deep insight into its essential attributes and the inner mechanism of its effectiveness in the cultural field ^[1].

Under the wave of globalization, cultural inheritance and innovation are of far-reaching significance to the sustainable development of nations and countries. However, the current academic community has not yet reached a full consensus on how digital art can balance the authenticity of cultural inheritance and the openness of innovation under the framework of technological philosophy. Foreign scholar Lev Manovich has made an in-depth analysis of the form and language of digital art in *The Language of New Media*, which provides an important theoretical cornerstone for the understanding of the nature of digital art; domestic scholar Xu Peng has also made fruitful achievements in the theoretical research of new media art, which emphasizes the significance of new media art in the paradigm and transformation. However, there is still room for research on the specific mechanism of digital art and cultural inheritance and innovation, as well as coping strategies to face the challenges. This study aims to fill this gap and contribute new insights to the theoretical development and practical application of related fields by systematically analyzing the role of digital art in cultural inheritance and innovation ^[2].

2. Interpretation of the philosophy of new media technology and the connotation of digital art

2.1. Core perspectives of the philosophy of new media technologies

Philosophy of new media technology is a philosophical field of reflection and inquiry on new media technology. German philosopher Heidegger pointed out that technology is a kind of “demystifying” way, and new media technology breaks through the shackles of traditional information dissemination by means of digitization and networking, and “demystifies” hidden information and knowledge so that people can more conveniently access and Communication. New media technology has autonomy and self-organization, and once created, it develops and evolves according to its own internal logic and law. Take the social media platform as an example, it initially originated from people’s demand for social interaction, but in the process of development, it has continuously derived diversified new functions and applications, and gradually built up a self-development ecosystem. Its high degree of network relevance has given rise to coexistence, prompting different individuals and groups to be closely connected through the network. Marx once said that man is the sum of all social relations, new media technology builds network social relations, so that people can cross the time and space limitations to carry out exchanges and cooperation, online education platform realizes the real-time interaction between teachers and students in different regions. New media technology also shows deep embeddedness or involvement, intermingling with culture, and reshaping people’s behavior, interaction, and life patterns, wearable devices, smart homes, and other technologies are increasingly integrated into the subtleties of people’s daily lives ^[3].

According to Don Ihde’s “technological embodiment theory”, technology plays an intermediary role in the interaction between human beings and the world, and human beings establish embodied relationships with the world through technology. In the field of digital art, this theory is embodied in the fact that creators and viewers interact with digital artworks by means of digital technological devices, such as computers and VR headsets, etc., and that digital technology has become an embodied intermediary between human beings and artworks, which has reconfigured the mode of interaction between human beings and culture. Katherine Hayles’ view of “posthumanism” emphasizes the reshaping of human subjectivity by technology, and in the process of digital art creation and appreciation, the intervention of technology has changed human creative thinking, aesthetic

experience, and identity cognition, further highlighting the impact of digital art on human and culture under the philosophical framework of new media technology. This further highlights the profound impact of digital art on the interaction between human beings and culture under the framework of the philosophy of new media technology.

2.2. Definition and characteristics of digital art

Digital art is a form of art that uses digital technology as a means of creation and display, covering a wide range of types such as digital painting, digital photography, digital music, digital video, virtual reality art, augmented reality art, etc. It has significant features such as digitization, interaction, virtualization, and diversity. It is characterized by digitization, interactivity, virtuality, and diversity. Digitalization is its foundation, and all art elements are stored and processed in digital form for easy editing, copying, and dissemination. Digital paintings can be modified and adjusted at will through software and can be quickly shared around the world. Interactivity is a key quality that distinguishes digital art from traditional art, as the audience is no longer a passive receiver, but can interact with the work and influence the presentation of the work. In virtual reality art exhibitions, viewers can manipulate elements in the virtual environment through gestures and movements, changing the course of the exhibition. Virtuality opens up unlimited creative space for artists, enabling them to create fantastical scenes and images that transcend reality. In digital games, designers build virtual worlds of all shapes and sizes, allowing players to enjoy unique adventures. Diversity is reflected in the integration of digital art with a variety of art forms and media, breaking the boundaries of traditional art categories, digital video works can be integrated with music, painting, literature, and other elements to create a rich and diverse artistic experience ^[4].

2.3. The intrinsic connection between new media technologies and digital art

New media technology provides technical support for the birth and development of digital art, which would not be possible without the digitization, networking, and interactivity of new media technology. Digital painting software relies on computer graphics processing technology to enable artists to create on a virtual canvas; virtual reality art relies on hardware technology such as VR equipment and sensors, as well as software technology such as 3D modeling and real-time rendering. Digital art is the concrete application and practical achievements of new media technology in the field of art, which highlights the advantages and charms of new media technology through art creation and display. Some new media artworks are disseminated through new media platforms, attracting massive audiences and enhancing the influence and recognition of new media technology. The two are complementary and synergistic, the innovation of new media technology brings new forms of expression and creative ideas for digital art, and the development needs of digital art also promote the continuous improvement and advancement of new media technology.

3. The role of digital arts in cultural transmission

3.1. Digital preservation and storage of cultural heritage

Cultural heritage carries heavy historical and cultural information and is a brilliant treasure of human civilization, but many cultural heritages are facing the crisis of damage or even disappearance due to factors such as age, natural erosion, and human destruction. With digital technology, such as 3D modeling, high-resolution image acquisition, virtual reality, etc., digital art can record and store cultural heritage

comprehensively. For ancient buildings, the use of laser scanning technology to obtain accurate three-dimensional data, and build virtual models, to achieve its appearance and structure of the permanent retention of information; for cultural relics, with the help of high-definition photography, three-dimensional reconstruction and other means to record the details of cultural relics, even if the cultural relics are damaged, can also be based on the implementation of digital models to repair. China's National Palace Museum uses digital technology for a large number of ancient buildings and cultural relics for digital acquisition and storage, to create a "digital Palace" project, so people can remotely utilize the network platform to enjoy the majestic beauty of the palace buildings and cultural relics of the precious value of the cultural heritage to achieve the permanent preservation of cultural heritage and wide dissemination.

3.2. Digital presentation and dissemination of traditional cultural elements

Traditional cultural elements, such as folk stories, traditional festivals, and folk customs, are the core components of national culture. Digital art integrates these elements into the creation and presents and disseminates them in a novel form. In digital animation, folk stories are integrated into the subject matter, and by virtue of exquisite graphics, vivid characterization, and exciting plots, folk stories are presented to the audience in a new light, expanding the influence of traditional culture. Some digital music works draw on traditional music elements, such as pentatonic scales and ethnic instruments, to create music with both modernity and traditional cultural flavor, which is widely circulated on online platforms, allowing more people to understand and love traditional music and culture. On social media, people spread the customs and cultural connotations of traditional festivals by sharing digital artworks, enhancing the public's knowledge and recognition of traditional culture ^[5].

3.3. Case study on digital arts for cultural transmission

Take Henan TV's "Chinese Festivals" series of programs as an example, the program cleverly uses digital art means to realize the perfect blend of traditional culture and modern technology. In "Tang Palace Night Banquet", with the help of virtual reality, augmented reality, and other technologies, it creates a luxurious scene of the Tang court, with actors dressed in Tang costumes as if coming from the depths of history, vividly interpreting Tang court music and dance. The program sparked a strong reaction on the Internet, with the microblogging topic #Tang Palace Night Banquet# being read more than 2 billion times, and a single episode of the program being played more than 5 million times on B station. According to the audience questionnaire survey, more than 80% of the viewers said that their awareness of traditional culture has been significantly improved, and the program has successfully stimulated people's strong interest in and love for traditional culture.

In the field of digital games, "The Original God" is based on traditional Chinese mythology, history, and culture, and incorporates a large number of traditional Chinese cultural elements. According to Sensor Tower's data, "The Original God" attracted \$245 million globally in the first month of its launch. According to the research of Reddit, NGA, and other player communities, over 70% of players highly recognize the traditional Chinese cultural elements in the game, and players are exposed to and learn about traditional Chinese culture in the process of playing the game, which is a way of teaching and enjoying the game, and plays a positive role in promoting cultural inheritance.

4. Synergistic relationship between digital arts in cultural heritage and innovation

Cultural inheritance and innovation are not isolated from each other but are complementary and synergistic organic whole. The digital cultural resources accumulated by digital art in the process of cultural inheritance, such as digital models of cultural heritage and digital presentation of traditional cultural elements, provide rich materials for cultural innovation. Taking the innovative interpretation of folk stories in digital animation creation as an example, the creators, based on the digitized records and organization of traditional cultural stories, make innovative designs for story characters, plots, picture styles, and so on through modern digital technology means, giving new vitality to traditional culture.

In turn, the new concepts, forms, and methods brought about by cultural innovation have injected vitality into cultural inheritance. For example, some digital art exhibitions integrating virtual reality technology have attracted more young audiences to traditional culture through innovative display methods, enhancing the dissemination effect and influence of traditional culture, and making cultural inheritance more vigorous and contemporary. Digital art builds a bridge between cultural inheritance and innovation and promotes the benign interaction and synergistic development of the two ^[6].

5. The role of digital arts in cultural innovation

5.1. Forms and means of expanding cultural innovation in the digital arts

Digital art breaks down the barriers of traditional artistic creation and expression, providing rich and diverse forms and means for cultural innovation. At the level of creative tools, digital painting software, and music production software provide artists with convenient and efficient ways of creation, lowering the threshold of creation and enabling more people to devote themselves to cultural creation. In terms of presentation, emerging digital art forms such as virtual reality, augmented reality, and artificial intelligence-generated art create unprecedented visual and auditory experiences. Virtual reality art immerses the audience in the virtual world constructed by the artworks, while augmented reality art skillfully integrates virtual elements with real-life scenarios, opening up new perspectives for artistic creation. Generative AI, represented by MidJourney and DALL-E, can create unique artworks through algorithms and machine learning, greatly expanding the boundaries of art creation and injecting new vitality into cultural innovation ^[7].

5.2. Digital art promotes the innovative development of the cultural industry

As an important component of the cultural industry, digital art has strongly promoted the innovation and development of the cultural industry. Digital arts have given rise to new cultural industries, such as digital games, online literature, online film and television, virtual idols, etc., which have become new growth points of the cultural industry. Take the digital game industry as an example, its scale continues to expand, and some popular games have not only achieved remarkable results in the domestic market but also made great achievements in the international market, creating huge economic benefits.

6. Techno-ethical and legal challenges facing digital arts in cultural transmission and innovation

Digital art is highly dependent on new media technology, and any malfunction or lag in updating the technology may adversely affect the creation, display, and dissemination of works. Software loopholes and damage to

hardware equipment may cause digital artworks to fail to operate normally or even lose data. Digital art faces serious network security risks, hacker attacks, data leakage, and other problems, which may damage the rights and interests of artists and the cultural industry. To meet the market, some digital artworks simply pile up and splice the cultural elements without deep excavation and innovation, resulting in the weakening of the cultural connotation. The virtual and interactive nature of digital art may make some creators pay too much attention to the immediate feedback from the audience and give up the exploration of the essence of art and cultural depth, thus affecting the quality and effectiveness of digital art in cultural inheritance and innovation. It is sometimes difficult to clearly define the copyright of digital artworks, and the copyright of AI-generated artworks has triggered a wide range of controversies. Due to the rapid development of digital art, relevant laws and regulations are relatively lagging behind, making it difficult to effectively deal with new problems in copyright protection of digital art, resulting in a lack of a clear legal basis for handling copyright disputes ^[8].

7. Strategies to address the challenges of digital arts in cultural heritage and innovation

Increase investment in the research and development of new media technologies, improve technical stability and safety, and reduce technical risks. Research institutions and enterprises should strengthen cooperation to develop more advanced digital art creation, display, and dissemination technologies, more efficient virtual reality equipment, and more intelligent creation software. Establish a sound management system for the application of technology, standardize the use of technology in the process of digital art creation, display, and dissemination, strengthen the maintenance and management of technical equipment, and ensure the smooth operation of technology. Strictly supervise digital art platforms, prevent network security risks, and guarantee the safety of user information and works.

Strengthen the cultural education and artistic literacy training of digital art creators, and guide them to deeply explore cultural connotations and emphasize the expression of artistic values. Colleges and art education institutions should offer relevant courses to cultivate students' understanding and inheritance of traditional culture, as well as a keen sense of artistic innovation. Encourage creators to study traditional culture in depth, integrate its essence into digital artworks, and create works with both deep cultural heritage and unique artistic style. Construct an evaluation system for digital artworks, emphasize the evaluation of the cultural connotation and artistic value of the works, and guide creators to pay attention to the quality of the works ^[9].

8. Conclusion

Based on the philosophical perspective of new media technology, this study deeply analyzes the important role of digital art in cultural inheritance and innovation. By virtue of its unique advantages, digital art has played a positive role in the protection of cultural heritage and the dissemination of traditional culture, while expanding the forms, inspiring the inspiration for cultural innovation, and vigorously promoting the innovative development of the cultural industry. However, in the process of development, digital art also faces challenges in various aspects such as technical ethics and law. By strengthening the management of technology research and development and application, focusing on the cultivation of cultural connotation and artistic value, perfecting the copyright protection mechanism, and exploring the potential of meta-universe technology in cultural heritage dissemination and other strategies, these challenges can be effectively dealt with, and the

sustained and healthy development of digital art in cultural inheritance and innovation can be promoted ^[10].

Disclosure statement

The author declares no conflict of interest.

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