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## Research on the Role of Digital Media in Promoting the Inheritance and Innovation of Dunhuang Mural Art

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### Abstract

*In the era of digital information development, digital media has gradually replaced the traditional paper media, and art communication has also achieved innovative development. As an important carrier of Chinese traditional culture, Dunhuang mural art in China carries historical and cultural connotations, and its artistic communication is also influenced by digital media. Taking digital technology as the carrier, digital media injects new vitality into the innovative communication of Dunhuang mural art in China, provides diversified media platforms, enriches the communication channels of Dunhuang mural art in China, and promotes the inheritance and innovation of Dunhuang mural art in China. Therefore, in order to better demonstrate the value of digital media and promote the high-quality development of China's Dunhuang mural art communication, this paper will focus on the influence of digital media on China's Dunhuang mural art communication, and combine the current situation of China's Dunhuang mural art communication, put forward the communication path of China's Dunhuang mural art communication in the digital media era, promote the communication and development of China's Dunhuang mural art, and better realize the modernization integration of China's Dunhuang mural art communication and digital media.*

**Keywords:** Digital Media, Dunhuang Fresco Paintings, China, Art Communicatio, Impact.

### Introduction

With the development and progress of media technology, with the support of information technology, media communication presents the development trend of digital media. Through the integration and development of technology and content, it brings diversified information content to the masses and enriches the form of artistic communication. Digital media has the characteristics of diversified communicators and interactive communication channels. With the support of science and technology, it activates the vitality of artistic development, and opens up a new path of artistic communication by realizing the integration of art and digital media. In the construction of spiritual culture, the state attaches great importance to the spread of Chinese traditional culture and art. [1] pointed out that it is the responsibility of the Chinese nation for the progress of world civilization to protect the Mogao Grottoes and inherit the Dunhuang culture<sup>[1]</sup>. Dunhuang mural is an important part of Dunhuang culture, with Han culture as the mainstream, is a historical culture formed by the intersection of multi-ethnic cultures, and is the achievement of civilization with distinctive regional characteristics of the Silk Road. With its rich colors, it shows the unique value of Chinese historical painting and has rich historical and cultural

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heritage<sup>[2]</sup>. Dunhuang mural art has elegant, solemn and heroic aesthetic style, and is full of strong artistic vitality. Through Chinese Dunhuang mural art, it is helpful to enrich the connotation of art and culture, enhance the sense of cultural identity and better carry forward Chinese excellent traditional culture. However, at present, the dissemination of Dunhuang mural art in China lacks the application of digital media, the dissemination channel is single, and the dissemination content is not rich, which affects the masses cognition level of Dunhuang mural art in China. Therefore, in order to better shape the image of Chinese art, in the modern art communication, Dunhuang murals need to take digital media as the carrier, rely on the development of digital technology, explore new ideas of Chinese Dunhuang murals art communication, realize Chinese Dunhuang murals art communication and cultural inheritance, enhance the artistic influence of Chinese Dunhuang murals, and realize the inheritance and development of Chinese traditional culture.

## II.The Influence of Digital Media on the Dissemination of Dunhuang Mural Art in China

### **Enrich Digital Communication Channels**

Digital media has brought rich content expression channels to the art communication of Dunhuang mural paintings in China, which is helpful to realize the transformation and development of digital communication. On the one hand, digital media has brought diversified communication channels to the dissemination of Chinese Dunhuang mural art. Through the innovation of paper media, we can create an art communication path that conforms to the aesthetics of the new era, endow Chinese Dunhuang mural art with modern digital flavor, and further expand the expression space of Chinese Dunhuang mural art dissemination<sup>[3]</sup>. For example, in the art dissemination of Dunhuang mural paintings, with the help of digital media such as Tik Tok, WeChat, Weibo and Xiaohongshu, arts such as Dunhuang flying culture can be better presented to the audience and the effect of art dissemination can be enhanced. With the support of digital media, a variety of art communication channels have been born. Audiences can experience Dunhuang mural art culture in games, software, movies, TV and other channels, broaden the scope of communication, break through the communication restrictions of traditional media in all aspects, and better enhance the communication effect of Dunhuang mural art in China.

### **Expand the Influence of Art Communication**

Digital media has given a new content form to the dissemination of Chinese Dunhuang mural art, which helps to expand the influence of art dissemination. Digital media combines computers and the Internet to create an art form of immersive experience and diversified dissemination, combines Chinese Dunhuang mural art dissemination with digital media, spreads Chinese Dunhuang mural art in a unique way, better highlights the values and aesthetic values of Chinese Dunhuang mural art dissemination, and enhances the influence of art dissemination. The dissemination of digital media breaks the traditional display form of Chinese Dunhuang mural art, aims at immersive experience and interactive participation, innovates the content of artistic dissemination, highlights the diversified cultural characteristics of Chinese Dunhuang murals, presents the magnificent and colorful Dunhuang murals to the audience with unique artistic style, artistically reproduces the profoundness of Dunhuang culture, and expands the influence of Chinese Dunhuang mural art dissemination<sup>[4]</sup>.

**Enhance the Appeal of Artistic Communication**

The art of Dunhuang murals has a strong appeal. With the support of digital media, the artistic features of Dunhuang murals are presented in diversified and multi-angle ways, bringing novel cultural experiences. With the help of 3D modeling technology and VR technology, the cultural perception of Dunhuang murals in China is enhanced, the depth of artistic experience is increased, and the appeal of artistic communication is better enhanced. Digital media can present real and infectious artistic content, create the historical features of Dunhuang murals in China, present three-dimensional history and culture of Dunhuang murals in China, and help realize the innovative development of Dunhuang murals in China. Digital media brings a platform for digital art and culture communication, visualizes abstract works of art, creates positive digital media art, builds a realistic artistic situation of Chinese Dunhuang murals, allows the audience to experience the artistic charm immersively, brings powerful visual appeal, and better spreads the artistic value of Chinese Dunhuang murals<sup>[5]</sup>. At the same time, digital media technology is integrated with the historical and cultural stories of Dunhuang murals, and presented in the form of videos, animations, games, etc., which makes Dunhuang murals present to the public in a more vivid and realistic form, increases the interactivity of artistic works, and feels the original charm of Dunhuang art, thus improving the appeal of art communication.

**III. Current Situation of Dissemination of Dunhuang Mural Art in China**

In the era of digital media, the forms of Chinese Dunhuang mural art include documentaries, animated films, TV dramas, etc. Table 1 below shows the representative works of Dunhuang culture film and television communication<sup>[6]</sup>. Through exquisite pictures and in-depth interpretation of Dunhuang stories, the documentary shows the unique charm of Dunhuang mural art and attracts the attention of many audiences. Animated films take Dunhuang murals as the carrier and inherit the artistic essence of Dunhuang murals through vivid stories. TV dramas build historical dramas with Dunhuang Mogao Grottoes as the background, so that more people can understand the history and culture of Dunhuang. Generally speaking, in the era of digital media, the communication forms of Chinese Dunhuang mural art are also diversified, which brings a new way for people to deeply understand Dunhuang culture, greatly improves the influence of Dunhuang culture, and promotes the inheritance and development of Chinese excellent traditional culture.

Work	Type	Work	Type
Silk Road Flower Rain	Dance drama	Zhang Daqians Legend of Dunhuang	TV series
Dream of Dunhuang	Dance drama	Thousand-handed Avalokitesvara	Spring Festival Evening Dance
Silk Road	Documentary	Dunhuang Flying Dance	Spring Festival Evening Dance
Hexi Corridor	Documentary	Here we go! Dunhuang	Variety
Dunhuang	Documentary	Sleepwalking in Dunhuang	Animated short film
One Belt, One Road	Documentary	Flying sky	Spring Festival Evening Dance

Table : List of representative works of Dunhuang cultural film and television communication

**(III) Problems existing in the dissemination of Chinese Dunhuang mural art****Simplification of Communication Channels**

Communication channel is an important guarantee to enhance the influence of Dunhuang mural art communication in China, but at present, there is still the problem of simplification of communication channel in Dunhuang mural art communication in China. The lack of diversified digital media communication channels in art communication affects the diversity of forms of Chinese Dunhuang mural art communication, resulting in insufficient influence of Chinese Dunhuang mural art communication, and the masses lack of cognition of Chinese Dunhuang mural history and culture. At present, Chinas Dunhuang mural art mainly relies on offline communication channels, with museums and art galleries as carriers, to present the artistic characteristics of Chinas Dunhuang mural art. However, offline communication channels are limited by time and space, which leads to the limited audience and affects the communication effect of Chinas Dunhuang mural art. At present, the digital media channels for the dissemination of Dunhuang mural art in China are not perfect, and the online communication platform has not been built. The emerging communication channels are not mature enough, which makes the artistic charm unable to be fully demonstrated and affects the inheritance and development of Dunhuang mural art culture in China.

**Artistic Expression is Not Rich**

In the era of digital media, Chinese Dunhuang mural art is also actively expanding the content of digital communication, but the overall artistic expression is not rich and innovative, which makes it difficult to show the attraction of Chinese Dunhuang mural art. In the era of diversified information, the artistic expression of Dunhuang mural art in China has become homogeneous, and the artistic expression of Dunhuang mural art in China has been spread with the help of movies and television. However, the artistic expression content lacks creativity, relies too much on the special effects innovation of digital media, lacks in-depth cultural excavation of Dunhuang mural art in China, lacks Chinese cultural implication, and it is difficult to form visual art with Chinese traditional cultural characteristics. Due to the lack of artistic expression, the quality of digital media communication content of Chinese Dunhuang mural art is not high, and the connotation of Chinese Dunhuang mural art is inaccurately grasped. The artistic value hidden behind Chinese Dunhuang mural art cannot be highlighted, and it is difficult to rejuvenate Chinese Dunhuang mural art.

**Lack of Communication Interactivity**

Interactivity is a typical feature of art communication in the era of digital media, but there is still a lack of interactivity in the art communication of Dunhuang murals in China, which makes it difficult for the audience to deeply experience the artistic charm of Dunhuang murals in China. In the art communication of Dunhuang murals in China, there is abuse of digital media, ignoring the interactive experience of the audience, blindly pursuing digital media communication channels, and digitally disseminating the art content of Dunhuang murals in China. However, it is difficult for the audience to have in-depth emotional resonance and exchange of ideas in the actual experience. Most digital media are just static displays of Chinese Dunhuang murals, which cant make the audience actively explore the history and culture behind Dunhuang murals, and its difficult to enhance the appeal of art communication.

### **Diversify and Build an Online Communication Platform for Art**

The era of digital media has brought diversified communication channels to the dissemination of Chinese Dunhuang mural art. In order to enhance the influence of art communication, we should take the characteristics of Chinese Dunhuang mural art communication as the guide, diversify the online dissemination platform of art, integrate digital media technology, endow the audience with diversified interactive forms of Chinese Dunhuang mural art, make full use of digital technology, diversify the online dissemination platform of art, and make Dunhuang mural art glow with new vitality in the new era<sup>[7]</sup>. First, build a communication platform of Dunhuang murals in China, design a propaganda webpage unique to Dunhuang murals in China, build a digital resource database of Dunhuang murals in China, and collect Dunhuang murals through high-definition cameras and scanning equipment to ensure the integrity and authenticity of digital resources. In the digital resource database, it provides the audience with a platform for online appreciation and construction of Dunhuang mural art in China, provides high-quality mural images, explains the historical and cultural background of Dunhuang mural in China in detail, and makes the masses have a deep understanding of Dunhuang art. Secondly, build a "two micro-and one end" communication system, namely WeChat, Weibo and mobile client, to form a systematic online communication platform, which will bring support to the development of Dunhuang mural art in China, and make use of rich and diverse communication forms such as short video, live broadcast and HTML5 of WeChat, Weibo and mobile client to enhance the communication effect of Dunhuang mural art. In addition, carry out online and offline activities, such as Dunhuang mural art exhibitions, lectures, workshops, etc., to dig deep into the artistic value and historical connotation of Dunhuang murals, and present them in a unique and vivid interactive way, so that users can feel the charm of Dunhuang mural art and enhance users sense of participation<sup>[8]</sup>.

### **Constructing the Digital Image of Interactive Dunhuang Mural**

In the era of digital media, Chinas Dunhuang mural art relies on artificial intelligence and computer technology to innovate the digital image of Dunhuang murals, create an interactive virtual image, present the language, expression and characterization of characters, and enhance the artistic aesthetic feeling of Dunhuang murals. In order to enhance the interactivity of artistic communication of Chinese Dunhuang murals, create IP images with artistic characteristics of Chinese Dunhuang murals, and construct artistic communication symbols to convey the artistic spirit of Chinese Dunhuang murals<sup>[9]</sup>. In the era of digital media, with the help of digital media, we should modernize and innovate the art and culture of Dunhuang mural in China, give full play to the advantages of digital technology, and innovate the communication content of digital media to highlight the unique charm of traditional culture. Constructing the interactive digital image of Dunhuang murals is the refinement and reconstruction of Chinese Dunhuang mural art, creating a digital morphological language, and spreading Chinese Dunhuang mural art more vividly and vividly. As an important carrier of cultural communication in the digital media era, digital image represents the cultural connotation of Dunhuang mural art in China, and can arouse the strong attention of the audience, so as to highlight the charm of Dunhuang mural art in China. We should create an image suitable for digital media communication, grasp the hot spots in the digital media era, better enhance the awareness of Dunhuang mural art in China, and enhance the effect of artistic communication. With the support of virtual digital images, the masses real experience of Dunhuang mural art in China can be enhanced, and interactive artistic experience can be enjoyed

to meet the spiritual and cultural needs of the audience. For example, Jiayao, the "Dunhuang Mogao Grottoes Official Virtual Human", will be released in 2022, as shown in Figure 1 below. Using Dunhuang mural art as the carrier and feitian culture as the inspiration, an interactive digital image will be constructed to explain the knowledge of Dunhuang mural art to the audience. The form of virtual and real integration shows the characteristic art of Chinese Dunhuang murals. Technical image. In the creation of digital image, with the help of artificial intelligence, 3D modeling and other technologies, the artistic image of Dunhuang with dynamic aesthetic feeling is presented, which realizes the diversified transmission of digital media of Dunhuang murals in China



Figure 1 Jiayao, the official virtual person of Mogao Grottoes in Dunhuang

### **Immersive Experience of Dunhuang Mural Art and Culture**

In the era of digital media, in order to enhance the appeal of Dunhuang mural art communication in China, give full play to the value of digital media, build an immersive experience space, vividly present the historical scenes of Dunhuang mural art communication, innovate the form of Dunhuang mural art communication, and promote the inheritance and development of Chinese traditional culture. Digital media takes digital technology as the carrier and uses artificial intelligence, VR, AR, 3D modeling and other technologies to bring immersive artistic experience space to the audience and enhance the communication effect of Dunhuang mural art in China<sup>[10]</sup>. In the age of fragmented information, in order to enhance the appeal of art communication, we need an immersive experience as the goal, so that Chinese Dunhuang mural art can enter the heart and mind. Immersive experience combines digital media technology to create a characteristic space of Chinese Dunhuang mural art, present perfect visual images and videos, so that the audience can hear, see and touch Chinese Dunhuang mural art, feel the charm and cultural essence of Chinese Dunhuang mural art, deepen the audiences sensory experience, stimulate the audiences love for Chinese Dunhuang mural art with immersive experience, and let the history and culture of Chinese Dunhuang mural art be passed down in immersive scenes. In recent years, Chinas Dunhuang mural art communication has actively followed the trend of the times, given full play to the advantages of digital technology, created a new track of digital media communication of Chinas Dunhuang mural art, felt the artistic charm of ingenuity, promoted the digitalization of Chinas Dunhuang mural art to be deeply rooted in the hearts of the people, and promoted the inheritance and innovation of Chinese traditional culture. For example, in 2023, the worlds premiere "Seeking Dunhuang-Digital Dunhuang Immersion Exhibition", as described in

Figure 2 below, uses VR and AR technologies to create a new landscape of digital presentation of the virtual world and immersive experience of Dunhuang culture. With the support of digital media, realize the function of experiencing the artistic charm of Dunhuang murals online. "Looking for Dunhuang-Digital Dunhuang Immersion Exhibition" counts Dunhuang mural art Presented in character form, using three-dimensional home mask technology and VR virtual display technology, publicize the knowledge of Dunhuang murals online, enhance the artistic experience of Dunhuang murals in China, and better appreciate the culture of Dunhuang murals<sup>[11]</sup>.



Figure 2 Looking for Dunhuang-Digital Dunhuang Immersion Exhibition

### **Diversified Narration of Dunhuang Mural Art Stories**

Dunhuang mural art in China contains rich historical stories. Dunhuang is a world cultural heritage of China, with rich content and exquisite skills. It describes the image of God in detail and forms a unique artistic style. With the introduction of Buddhism into China, Dunhuang murals won vigorous development in the Silk Road era. The murals take Buddhist stories as the theme, showing the exquisite skills of ancient Chinese paintings. In the era of digital media, we should use the historical stories of Dunhuang murals in China to form unique artistic communication content and tell the artistic stories of Dunhuang murals in China, so as to realize the purpose of spreading the artistic charm of Dunhuang murals in China. In the report of the 19th National Congress of the Communist Party of China, pointed out that "tell Chinese stories well, show a true, three-dimensional and comprehensive China, and improve the national cultural soft power". In order to better reflect the historical connotation of Dunhuang murals in China, we should deeply dig the history and culture of Dunhuang murals, arouse the audience and citizens with the help of historical stories, and achieve the role of spreading cultural value. To tell the historical story of Dunhuang murals in China, it is necessary to dig out the story content representing the cultural characteristics and artistic charm of Dunhuang murals in China, so as to highlight the cultural image of Dunhuang murals in China and truly let the audience accept the art of Dunhuang murals in China. The first is to tell the prototype story. Through in-depth understanding of the Silk Road, Buddhist culture and other contents, in-depthExcavate the

prototype story theme of Chinese Dunhuang mural art, publicize Chinese Dunhuang mural stories through digital media, such as broadcasting Dunhuang story propaganda films in Tik Tok, etc., highlight the intrinsic value of Chinese Dunhuang mural art, present real story situations to the audience, attract audiences with excellent prototype narrative methods, and enhance the communication effect of Chinese Dunhuang mural art. The second is to tell interactive stories, take Dunhuang murals in China as the carrier, build interactive storylines, and use digital media to spread them to bring immersive experience to users and promote the innovation and development of Dunhuang murals in China. Interactive stories can enable the audience to enhance their understanding of Chinese Dunhuang mural art in interactive experience, feel the aesthetic feeling of Chinese Dunhuang mural art, take the development of Dunhuang stories as the plot, bring the audience into the story situation, integrate into Chinese Dunhuang mural art and culture, and produce strong emotional resonance. For example, "Digital Scripture Cave" takes the game as the carrier, sets up the game character experience, constructs the game skin, virtual props, etc. of Chinese Dunhuang murals, and forms an interactive effect. Based on the interest in the game characters in the game experience, players can generate a deeper sense of identity of Chinese Dunhuang mural art value and enhance the spread of digital media of Chinese Dunhuang mural art<sup>[12]</sup>.

### **Enrich the Communication Form of Dunhuang Murals at Multiple Levels**

Relying on Internet technology, digital media has given birth to diversified forms of art communication. Using digital technology as a tool to spread China's excellent culture will help to build cultural self-confidence and enhance the effectiveness of spiritual civilization construction. In the digital age, TV, movies, etc. have brought media platforms for the dissemination of Dunhuang mural art in China. With the support of the Internet, new media such as Tik Tok Short Video, Weibo and Aauto Quicker have been born, which will also become an important force for the dissemination of Dunhuang mural art in China. Therefore, in the era of digital media, it is necessary to enrich the communication forms of Dunhuang mural art at multiple levels, give full play to the advantages of digital media, promote the development of short videos, digital movies, games and other diversified forms of Chinese Dunhuang mural art, create multi-dimensional communication forms of Chinese Dunhuang mural art, and enhance the influence of Chinese Dunhuang mural art. First of all, in the digital media of digital movies and TV variety shows, we should build high-quality artistic content of Chinese Dunhuang murals, enhance the characteristics of artistic communication, meet the spiritual and cultural needs of the masses, give full play to the artistic value of Chinese Dunhuang murals, and enhance the aesthetic creativity of the masses. For example, in the excellent short play "The Pursuit of a Thousand Walls", with Dunhuang murals as the content and the search for mural fragments as the clue, story themes such as towel dance, scattered flowers flying into the sky, and Yi Qiu, the god of Go, are designed to teach the audience Dunhuang mural culture, build an all-media digital communication carrier, and enhance the effect of cultural communication. Secondly, with the help of mobile short videos, conform to the trend of the times. Innovate the art communication form of Dunhuang murals in China, deepen the depth of art communication, and provide audiences with viewing experience anytime and anywhere. In the short video dissemination, micro-videos, documentaries and story columns of Chinese Dunhuang murals are produced to present excellent Chinese Dunhuang mural art in a short and concise form, and Tang Xuanzang's story paintings of learning from scriptures, karma story paintings, Buddhist stories and other contents are broadcast to expand the dissemination resources of Chinese Dunhuang mural art to highlight the charm of Chinese Dunhuang mural art culture.

## **Conclusion**

To sum up, in the Internet age, the communication value of digital media has become increasingly prominent. In order to better inherit the artistic characteristics and traditional culture of Dunhuang murals in China, we should give full play to the value of digital media, innovate the form of art communication and enrich the communication value of Dunhuang murals in China. With the support of digital media, by diversifying the online communication platform of art, building the interactive digital image of Dunhuang murals, immersing the art culture of Dunhuang murals, diversifying the story of Dunhuang murals, and enriching the communication forms of Dunhuang murals at multiple levels, the combination of Chinese Dunhuang murals and digital technology can enhance the influence of Chinese Dunhuang murals, enhance the audiences sense of artistic experience, strengthen the sense of cultural identity, and promote the new vitality of Chinese Dunhuang murals in the digital media era.

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