International Journal of Innovation and Industrial Revolution
EISSN: 2637-0972
IJIREV
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

INTERNATIONAL JOURNAL OF INNOVATION AND INDUSTRIAL REVOLUTION (IJIREV)
www.ijirev.com

THE LATEST TRENDS IN THE DIGITAL DISPLAY OF TRADITIONAL CHINESE PAINTING

Ma Xiaoyan[1], Azlin Sharina Abdul Latef[2*], Mohd Firdaus Naif Omran Zailuddin[3], Tenh Hock Kuan[4], Tang Yao[5]

[1] Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
Email: c22e004f@siswa.umk.edu.my
[2] Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
Email: azlinsharina@umk.edu.my
[3] Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
Email: firdaus.oz@siswa.umk.edu.my
[4] Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
Email: kuan.th@siswa.umk.edu.my
[5] Faculty of Creative Technology and Heritage, Universiti Malaysia Kelantan
Email: 1005200536@qq.com
[*] Corresponding Author

Article Info:

Article history:
Received date: 27.10.2025
Revised date: 18.11.2025
Accepted date: 01.12.2025
Published date: 09.12.2025

To cite this document:

Ma, X., Abdul Latef, A. S., Zailuddin, M. F. N. O., Kuan, T. H., & Tang, Y. (2025). The Latest Trends in the Digital Display of Traditional Chinese Painting. *International Journal of Innovation and Industrial Revolution, 7* (23), 199-213.

DOI: 10.35631/IJIREV.723014

Abstract:

This study investigates current trends in the digital display of traditional Chinese painting. From 158 CNKI articles, keyword analysis with VOSviewer and qualitative coding with NVivo identified five dimensions: applications, communication strategies, technology types, experience features, and transmission modes. Results show that research highlights digital archives, education, museum exhibitions, and immersive tools such as VR and AR, but often lacks sustainability, cultural interpretation, and empirical validation. The study concludes that future work should integrate cultural values with user-centered and sustainable strategies to enhance both preservation and global dissemination of Chinese painting.

Keywords:

Traditional Chinese Painting, Digital Display, CNKI Database, Immersive Experience, Communication Strategies

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Introduction

With the rapid development of digital technology, the preservation and dissemination of traditional paintings are no longer restricted by geographical boundaries or physical means (Xu & Lu, 2024). Digital technology has become an important bridge connecting the past with the present. Through high-precision scanning and reproduction, precious and fragile ancient paintings can be permanently preserved and displayed globally (Jiang et al., 2022). In recent years, the widespread application of emerging digital technologies such as Artificial Intelligence (AI), Virtual Reality (VR), and Augmented Reality (AR) has deepened the integration of traditional painting with digital science and technology, expanding its space for creative development(Yi, 2025).

Among them, VR technology, with its electronic and immersive advantages, breaks the physical limitations of art dissemination, offering entirely new modes of display and experience (Jin et al., 2020). Regardless of where the audience is located, as long as they have access to the internet, they can enjoy an immersive experience of Chinese painting art; art exhibitions are no longer confined to specific times and places, but can be held online anytime and anywhere (Tong, 2024). Digital presentation not only enriches the expressive forms of paintings but also greatly broadens their audience, enabling more people to conveniently access and appreciate high-quality works of art. In the digital era, Chinese classical paintings handed down through generations can be popularized through new media technologies. In particular, museum-held, heritage-level masterpieces of Chinese painting can enter the public's field of vision and daily life via virtual presentation (Can, 2024). For example, the digital art exhibition Along the River During the Qingming Festival 3.0, jointly organized by the Palace Museum and Phoenix TV, was launched at the Guangzhou International Media Harbor. In the dome theater, a spherical screen presented a five-minute video that depicted the Bian River's transition from bustling daytime scenes to the striking release of Kongming lanterns at night (d-art, 2025).

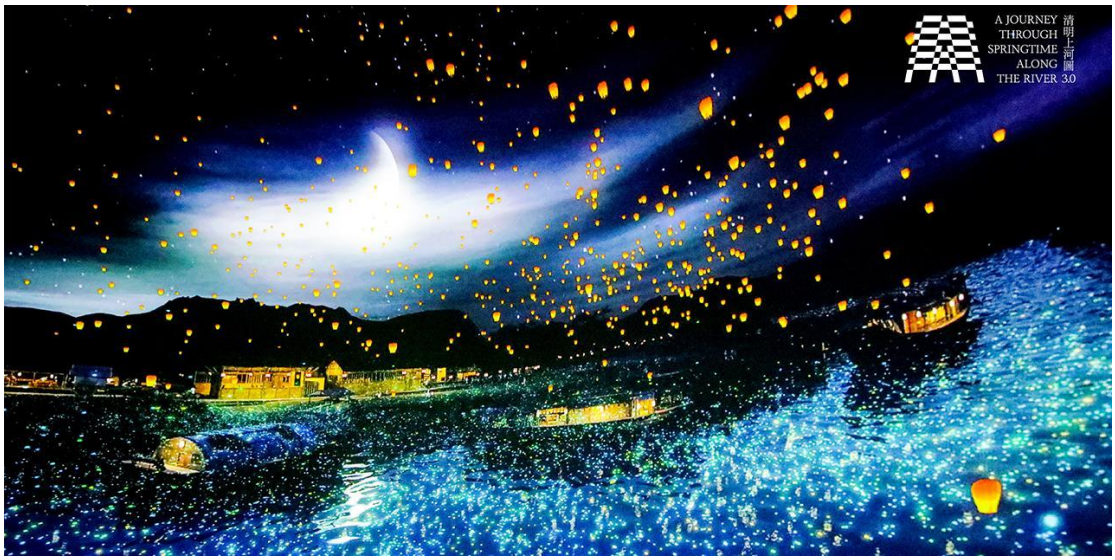

Figure1：Along the River During the Qingming Festival 3.0

Beyond virtual displays, museums have also developed a variety of interactive installations. For example, the Palace Museum's Shiqu Baoji Digital Art Exhibition transformed the static scene of Night Revels of Han Xizai into a dynamic experience through digital technology. By

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

enabling visitors to replace the faces of the figures in the painting with their own via facial recognition, the exhibition significantly enhanced immersion and audience engagement (d-art, 2025).

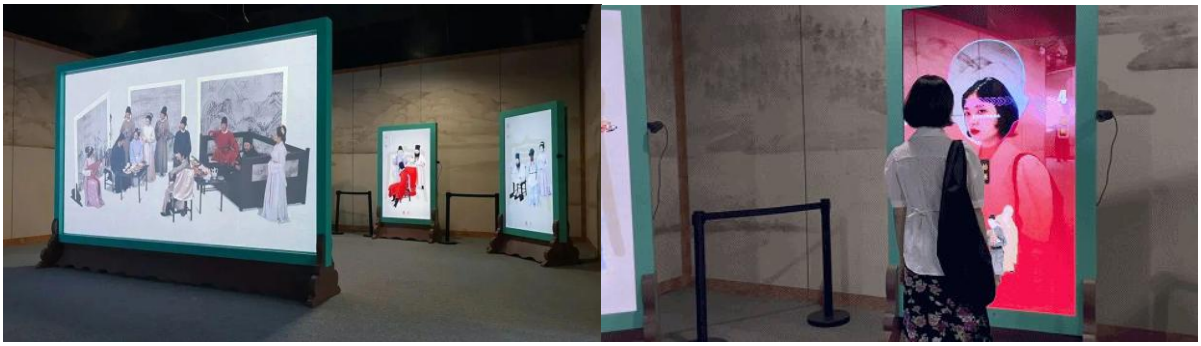

Figure2：Night Banquet of Han Xizai series

However, there is still a lack of systematic collation and analysis of virtual presentation methods for Chinese painting, especially in terms of literature review and classification based on the China National Knowledge Infrastructure (CNKI) database (Mingjin, 2022). As the primary academic database for research on traditional Chinese culture, CNKI contains a large number of important publications in the field of native culture (Jianhua & Yulian, 2022). A systematic analysis of virtual display methods will not only help to comprehensively understand the characteristics and trends of the current digital dissemination of Chinese painting, but also provide a solid foundation for future theoretical research and practical applications (Zhang et al., 2024).

Literature Review

With the rapid development of digital technology, the preservation and dissemination of traditional paintings have broken through geographical and physical limitations (Shuting, 2024). Digital techniques, through high-precision scanning and reproduction, have enabled the long-term preservation of precious and fragile ancient paintings and their display to a global audience (Dunyi, 2023). In recent years, the integration of emerging technologies such as artificial intelligence (AI), virtual reality (VR), and augmented reality (AR) has expanded the creative space for the dissemination of traditional paintings (Yixin, 2024). Among them, VR technology, with its immersive and interactive advantages, has transcended the physical boundaries of art dissemination, allowing audiences to experience art exhibitions online regardless of their location (Tongge & Yao, 2023).

Digital presentation not only enriches the forms of expression of paintings but also broadens the audience base, enabling more people to conveniently appreciate high-quality artworks (Binbin, 2023). In particular, museum collections of cultural relic-grade Chinese paintings have entered the public eye and everyday life through virtual presentation. Major institutions such as the Palace Museum have digitized masterworks (e.g. the Qingming Shanghe Tu) and launched virtual exhibitions, 3D long-scroll projections and online galleries, enabling broad public access and incorporation into education and daily cultural practices (Museum, 2025).

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

However, there is still a lack of systematic review and analysis of the virtual presentation methods of Chinese paintings, especially literature-based sorting and classification studies within the China National Knowledge Infrastructure (CNKI) database (Mingjin, 2022).

Research Gap

Although digital and virtual reality (VR) technologies have opened up new pathways for the preservation and dissemination of traditional Chinese painting, existing research still lacks a systematic review and comparative analysis of different virtual presentation methods. Current literature on the virtual presentation of Chinese painting tends to focus on individual technological applications or artistic effects, without offering a comprehensive summary or classification of various types and characteristics (Shaojun, 2025). Furthermore, immersive technologies such as VR demonstrate significant advantages in the virtual presentation of Chinese painting, such as high levels of immersion and interactivity—yet also face certain limitations in terms of technological adaptation and the transmission of cultural connotations (Xinyi, 2023). The differences among virtual presentation methods in audience experience, communication effectiveness, and cultural value transmission remain insufficiently explored, which not only restricts the theoretical understanding of their academic value but also hinders the optimization of presentation strategies in practice.

In this context, this study aims to address the following key research questions:

1.What types of virtual presence technologies are employed in the virtual presentation of Chinese

2. What are the primary modes of transmission used for disseminating Chinese painting virtually?

3. What are the key features that define the virtual presentation of Chinese painting?

4. What are the main application areas of virtual presentation technologies in Chinese painting?

5. What communication strategies are adopted in the virtual dissemination of Chinese painting?

Research Objectives

The scope of this study is limited to the field of traditional Chinese painting, with a focus on research published within the past five years in order to capture the latest trends and developments. The Chinese National Knowledge Infrastructure (CNKI) database is selected as the primary source for literature retrieval, as it contains a significantly larger volume of relevant academic articles compared to other databases, thereby providing a more comprehensive and representative dataset for analysis (Xu et al., 2022).

The objectives of this study are as follows:

I. To categorize and evaluate the different types of virtual presence technologies employed in the virtual presentation of Chinese painting.
II. To explore the key features that characterize the virtual presentation of Chinese painting.
III. To examine the respective characteristics of different technological and dissemination approaches.
IV. To identify and analyze the main application areas of virtual presentation technologies in the context of Chinese painting.
V. To examine the communication strategies adopted in the virtual dissemination of Chinese painting.

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Methodology

This study examines the virtual presentation of Chinese painting over the past five years to identify its main characteristics and research trends. The China National Knowledge Infrastructure (CNKI) database was chosen due to its significantly larger volume of relevant publications compared to other databases, ensuring comprehensive coverage. Using CNKI's advanced search, keywords related to Chinese painting (including traditional painting, landscape painting, flower and bird painting, freehand painting, and meticulous painting) and digital technologies (such as traditional painting, landscape painting, flower and bird painting, freehand painting, and meticulous painting) were combined. The search was limited to academic journal articles and postgraduate theses from the most recent five years. After excluding irrelevant records, 158 journal articles were retained for analysis.

Qualitative content analysis was conducted in NVivo to categorize and summarize virtual presentation methods, focusing on aspects such as interactivity, immersion, aesthetic quality, and cultural communication. Additionally, VOSviewer was used to perform keyword co-occurrence analysis, generating visual maps that reveal thematic clusters and research hotspots in the field, thereby supporting the interpretation of current trends and potential future directions.

Results

Findings Based on Keyword Co-occurrence Analysis

The keyword co-occurrence map generated by VOSviewer reveals the current research landscape on the virtual presentation of Chinese painting（See Figure 3. The visualization indicates that the most prominent clusters revolve around terms such as "Shùzì huìhuà(digital painting), Chuántǒng huìhuà (traditional painting), Shùzì jìshù (digital technology), Shùzì túxiàng (digital image), and Xūnǐ xiànshí (virtual reality)". Among these, virtual reality (VR) appears with the highest frequency, suggesting that it has become the most widely applied digital technology in this domain. This finding highlights a clear research trend: while multiple digital methods such as digital animation, panoramic video, and holographic projection are utilized, VR stands out as the dominant approach due to its capacity to generate immersion, presence, and interactivity (Xinyi, 2023).

Furthermore, the co-occurrence of "Shěnměi jiàzhí (aesthetic value), Yìjìng (artistic conception), and Měishù měixué (art aesthetics)" with technological terms such as "Réngōng zhìnéng (artificial intelligence)" and "Dònghuà (animation)" underscores the interdisciplinary effort to integrate technological innovation with the preservation of artistic authenticity. In the context of Chinese painting, aesthetic value and artistic conception are not merely decorative dimensions but constitute the core of cultural expression and communication. As emphasized byZeqiong and Xiangsheng (2025), aesthetic quality significantly shapes user perceptions in immersive experiences, ensuring that technological mediation does not diminish cultural depth. Similarly, studies on VR in cultural heritage highlight that the emotional resonance of artworks is inseparable from the preservation of their aesthetic authenticity (Jangra et al., 2025).

The map also illustrates emerging directions, such as "Duōméitǐ rónghé (media integration), AI huìhuà (AI painting), and Xīn méitǐ shídài (new media era)," which indicate a shift toward cross-disciplinary innovation. This trend underscores that the development of Chinese painting in the digital age emphasizes multi-platform and diversified modes of dissemination, extending

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

its influence beyond traditional art contexts into broader cultural and technological domains(Linbo & Shunan, 2025).

In summary, current research demonstrates that VR is the most widely applied technology in the virtual presentation of Chinese painting, valued for its immersion and interactivity. Aesthetic value and artistic conception remain central, ensuring cultural authenticity. Emerging trends such as media integration and AI painting highlight multi-platform and diversified dissemination, reflecting cross-disciplinary development in the digital age.

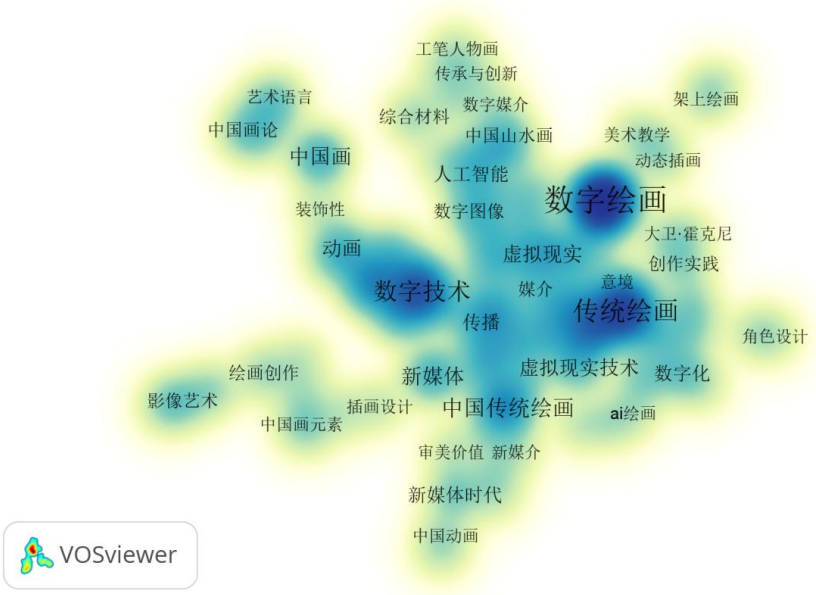

Figure3：Keyword Co-occurrence Map

The keyword co-occurrence network shows that "digital painting," "traditional painting," and "digital technology" form multiple cluster centers, reflecting the overall evolution of traditional painting research in the digital age. Firstly, the correlation between themes such as "digital technology—animation—decorative" and "artificial intelligence—digital image—mixed media—tradition and innovation" indicates that digital technology has become a significant driving force for paradigm shifts in art research. Dunyi (2023) points out that digital restoration and cross-media re-creation are constantly updating the aesthetic presentation of traditional painting.

Secondly, the brown and yellow clusters revolve around "digital painting—traditional painting—virtual reality," reflecting a key shift in research from content analysis to technological experience. Numerous studies emphasize the decisive role of VR in this process. Wang Xuran (2023)points out that VR can construct a three-dimensional immersive environment, enabling viewers to instantly read and explore painting content through multiple senses, significantly enhancing the sense of presence and interactivity. Shuting (2024) further argues that the realism and interactive feedback of the VR environment can encourage users to deeply engage cognitively and emotionally, thus creating a strong immersive experience. Therefore, with the increasing centrality of VR-related vocabulary, the research focus has

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

shifted from "art appreciation" to "technological immersion," emphasizing how digital media reshapes how users view, understand, and disseminate traditional paintings.

Furthermore, the interconnected clusters of "painting creation—illustration design—video art" illustrate the emergence of cross-media convergence in the field of visual communication. Research on VR painting. Tengfei (2023) points out that three-dimensional painting space breaks through the limitations of traditional two-dimensional space, enabling visual expressions such as illustration and video to gradually combine with digital storytelling methods.

Finally, clusters such as "new media—aesthetic value—Chinese animation" connect with "Chinese painting" and "new media era," demonstrating that digital media is expanding the aesthetic scope of traditional art. Xue (2023) points out that digital media art, with its high dissemination power and innovative expressiveness, provides new paths for the dissemination of traditional art in contemporary society.

Overall, the keyword co-occurrence network reveals the evolutionary path of digital art research: with the development of digital technology, immersive media such as VR, AR, and AI have gradually become the focus of research; user experience has gradually replaced traditional content analysis as the core of research; and traditional art research has also shifted from simple content appreciation to technology-driven immersive experiences.

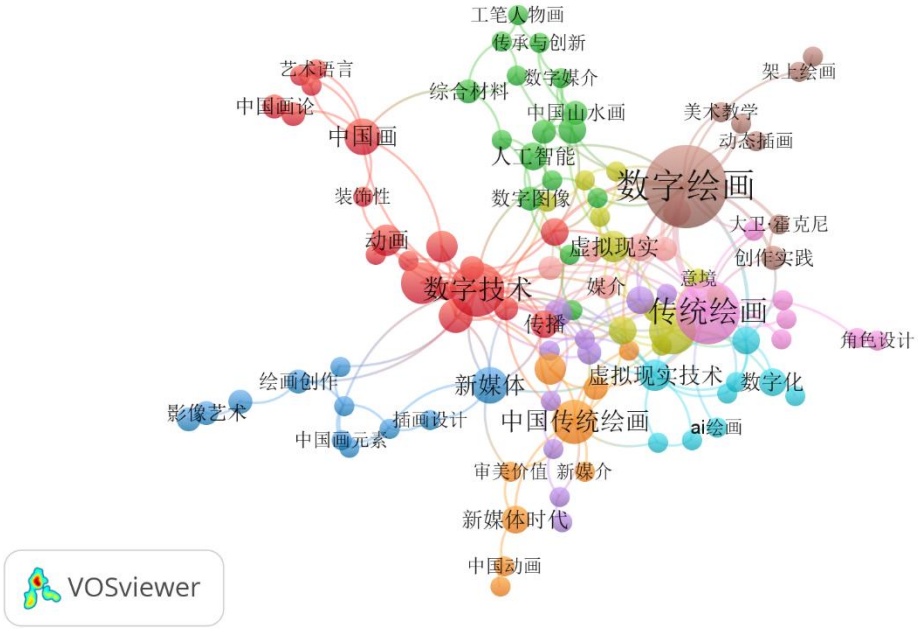

Figure4：Keyword Co-occurrence Map2

The trend chart indicates that research on integrating Chinese painting with digital technology has been on the rise in recent years (See Figure 5). This growth not only reflects the increasing importance that academia attaches to the value of digital means in the preservation, display, and dissemination of traditional art but also indicates that digital technology has gradually become a significant driving force for innovation in Chinese painting research. With the development of immersive media such as VR, AR, and AI, researchers are beginning to shift from technique analysis to experiential research, and from static presentation to interactive

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

dissemination, making digital technology an indispensable new direction in Chinese painting research (Tongge & Yao, 2023).

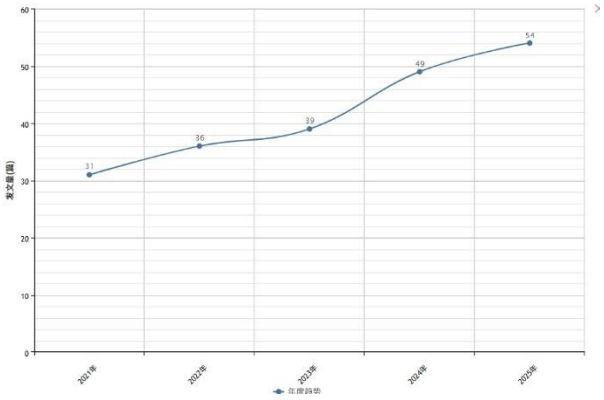

Figure5：Posting Trend Chart

Findings Based on content Analysis

Based on the analysis of 15 highly relevant journal articles, this study conducted systematic coding using NVivo to identify research foci in the virtual presentation of Chinese painting. The coding process generated multiple nodes and reference points, which were further visualized in the diagram (see Figure6 and Figure7). These results reveal the thematic structure of current scholarship and provide the foundation for addressing five key research questions (RQs). The correspondence between keyword clusters and NVivo codes is shown in Table 1. The detailed findings are presented as follows:

In the virtual presentation of Chinese painting, common technological approaches include virtual reality (VR), augmented reality (AR), 360-degree panoramic video, holographic projection, glasses-free 3D, and multisensory interaction. NVivo coding identified 11 nodes and 71 references, indicating that “types of virtual presentation technologies” constitute a key research topic. Among these, VR and AR are the most prominent (VR mentioned 7 times, AR 4 times), while 360-degree panoramic video, holographic projection, glasses-free 3D, and multisensory integration are also widely discussed. This suggests that research has shifted from single digital display methods to multidimensional immersive and interactive technologies (Miao & Mingjian, 2023).

“Mode of transmission” includes 9 nodes and 49 references, reflecting the trend toward diversification of dissemination methods. Research highlights the importance of cross-border communication, digital museum dissemination, exhibition-based dissemination, and social media dissemination. Among these, museum digital platforms and online exhibitions have become the primary channels, while the integration of cross-media and cross-platform approaches has facilitated the international dissemination of Chinese painting(Linbo & Shunan, 2025).

In particular, digital museum dissemination is regarded as playing a prominent role in education and the construction of cultural identity, whereas the rise of social media has lowered the barriers to dissemination, enabling traditional art to reach a broader audience (Shaojun, 2025).

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

"Features" represent the densest category in the coding results (10 nodes, 102 references), mainly encompassing interactive experience, aesthetic experience, immersion, authenticity, and cultural identity. Research emphasizes that the virtual presentation of Chinese painting should not remain at the technical level alone, but must also focus on conveying "aesthetic value" and "artistic conception" (Xinran, 2023). For example, interactivity is regarded as a key factor in enhancing viewers' emotional resonance (Xu & Lu, 2024), while aesthetic experience and authenticity ensure that digital transformation does not weaken the cultural depth of traditional painting (Tongge & Yao, 2023). This suggests that future virtual presentations need to maintain a balance between "technological immersion" and "cultural expression."

The application domains involve 11 nodes and 46 references, covering areas such as digital archives, education and science, museum exhibitions, and cross-cultural communication. Among these, "digital archives" are the most common application scenario (7 occurrences, 18 references), indicating that scholars generally regard digital preservation as the foundation for the inheritance of Chinese painting (Yuxin & Dayan, 2025).In addition, education and museum exhibitions are viewed as important means to promote public awareness and cultural dissemination, while cross-cultural exchange and large-scale cultural events further expand the international influence of Chinese painting. As some studies emphasize, virtual exhibitions not only serve the purposes of preservation and dissemination but also play roles in cultural diplomacy and cross-cultural understanding (Shuting, 2024).

The category of "communication strategies" comprises 9 nodes and 36 references, mainly focusing on multi-platform dissemination, enhanced interactivity, respect for the original artwork, and the cultivation of cultural identity. Research indicates that multi-platform dissemination (such as VR exhibitions, social media, and digital platforms) is the core pathway to enhancing influence, while strengthening interactivity is considered key to stimulating user engagement and emotional resonance (Tongge & Yao, 2023). At the same time, some scholars emphasize that virtual representations must respect the original artwork and avoid "aesthetic distortion" caused by excessive technologization (Xinran, 2023). Therefore, the most effective communication strategies often strike a balance among interactivity, authenticity, and cultural identity.

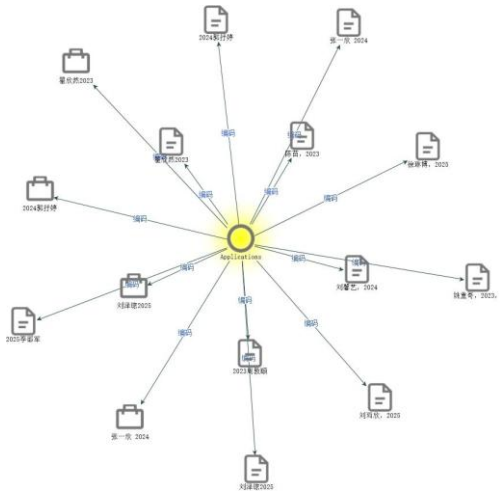

Figure 6: Exploratory Diagram of Application Scenarios for Traditional Chinese Painting

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

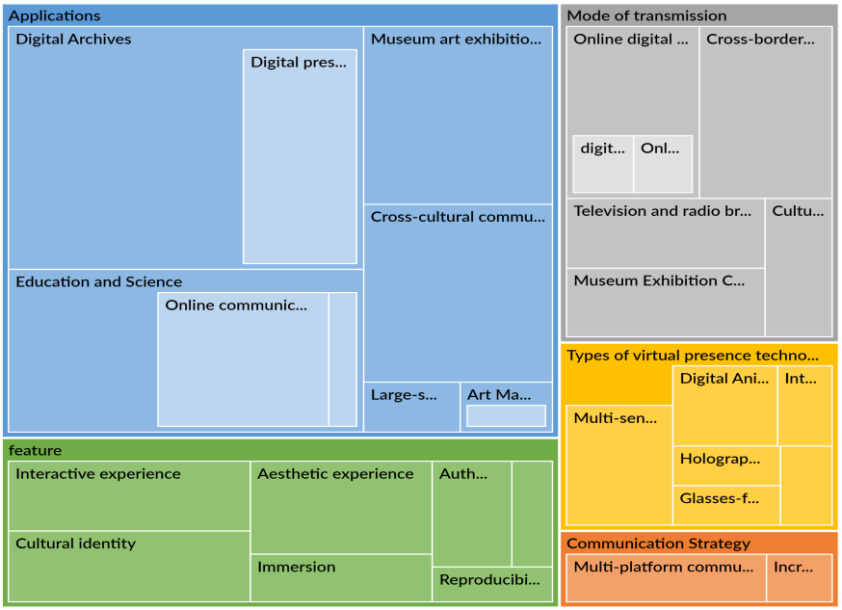

Figure7： Comparison of Reference Point Counts by Code

Table 1: Keyword Clusters and Their Corresponding NVivo Codes

NVivo encoding	Explanation of meaning	Keyword clusters
Types of virtual presence technologies	The virtual presentation technologies discussed in this study encompass VR, AR, MR, 360° panoramic video, holographic projection, glasses-free 3D, dome-based visualization, multi-sensory fusion technologies, digital animation, and embodied interaction design supported by interactive and somatosensory devices.	Virtual Reality Technology; Digital Imaging; Digital Ink Painting; AI Painting;
Applications	These technologies are widely applied in museum art exhibitions, large-scale cultural events, education and science communication, digital archiving, cross-cultural communication, and the art market.	Digital Painting; Chinese Painting; Video Art
Communication Strategy	These communication strategies aim to stimulate cultural identity, respect the integrity of the original work, reduce production and dissemination costs, support multi-platform communication, enhance interactivity, and improve user feedback.	Inheritance and Innovation Aesthetic Value Creative Practice
Feature	These characteristics highlight younger-oriented communication, transmission across time and space, strong memorability, reproducibility and diffusibility, multi-level and interactive experiences, immersive engagement, emotional design, and an emphasis on cultural identity, authenticity, and aesthetic experience.	Aesthetic Value; Artistic Conception

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Mode of transmission	These communication methods encompass television and radio broadcasting, social media dissemination, policy promotion, online digital museum communication, museum exhibition communication, cultural and creative product promotion, and cross-border communication.	Communication; New media; Media;

Discussion

Applications

This study finds that the applications of virtual presentations of Chinese painting are mainly concentrated in digital archives, education and science, as well as museum exhibitions, highlighting the academic community's strong focus on cultural heritage preservation and educational dissemination (Dunyi, 2023). This trend suggests that virtual presentations play a crucial role in preserving the cultural essence of Chinese painting and increasing public awareness. However, current application-oriented research largely emphasizes technological feasibility and functionality, while insufficient attention has been given to establishing systematic preservation standards and long-term sustainability mechanisms in digital archives (Shaojun, 2025). At the same time, applications in the field of education often remain at the level of knowledge transmission, with limited exploration of learning outcomes, cross-cultural understanding, and emotional resonance. Future research could further integrate perspectives from educational psychology and cross-cultural communication to examine the deeper roles of virtual presentations in knowledge construction and the cultivation of cultural identity (Tongge & Yao, 2023).

Communication Strategies

Research on communication strategies has primarily focused on multi-platform dissemination and enhancing interactivity, reflecting the scholarly emphasis on audience engagement and communication effectiveness (Dunyi, 2023). However, existing studies tend to stress the technological diversity of applications (such as VR exhibitions and social media dissemination), while paying comparatively less attention to the establishment of long-term audience relationships and the sustained cultivation of cultural identity. At the same time, some scholars have pointed out that excessive reliance on technological innovation may lead to "aesthetic distortion," whereby virtual reproduction diminishes the original artistic atmosphere and cultural depth of Chinese painting (Xinran, 2023). By combining semiotics and representation theory, we can reveal how digital technology reorganizes traditional symbols such as imagery, color, and composition, thus presenting them in an innovative way while potentially causing aesthetic deviations or changes in cultural meaning (Hall, 1997).Therefore, future research on communication strategies should place greater emphasis on achieving a balance among authenticity, interactivity, and cultural identity. Rather than focusing solely on the short-term appeal generated by technological innovation, it should also consider how to build sustainable cultural communication mechanisms.

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Types of Virtual Presence Technologies

NVivo analysis reveals the prominent role of immersive technologies, such as VR, AR, and multisensory integration, in virtual presentations, indicating that the academic community generally regards them as key tools for enhancing immersion and interactive experiences (Shuting, 2024). However, an excessive emphasis on technological innovation may give rise to two issues: first, there is insufficient in-depth comparison across different technologies—for example, the differential impact of VR and 360° video on emotional resonance has yet to be systematically validated; second, research on the cultural adaptability of technology choices and audience diversity remains limited, with little discussion of how different groups experience aesthetic and cultural dimensions through different technologies. Therefore, future studies need to strengthen comparative research across multiple technologies and integrate user-centered research methods to explore how technology types influence cultural cognition and aesthetic experience, thereby achieving contextualized and differentiated applications of technology.

Features of Virtual Experience

Research has shown that interactivity, immersion, aesthetic value, authenticity, and cultural identity are the most prominent features of virtual display, which closely align with existing theoretical frameworks such as presence and user experience studies. In particular, the central role of aesthetic value and cultural conception in the virtual reproduction of Chinese painting highlights that virtual display is not merely a technological process but also a form of cultural expression and aesthetic reconstruction. Among these, immersion and presence are closely related theories. Immersion emphasizes the immersive experience provided by technology, while presence refers to the psychological state of "being there" that results from it. Together, they constitute the core experiential mechanism in the appreciation of digital Chinese paintings(Steuer, 1992). However, current studies largely emphasize the importance of these features through conceptual discussions, while lacking empirical validation (Zeqiong & Xiangsheng, 2025). For example, how exactly does interactivity enhance audiences' emotional resonance? How is authenticity perceived across different display technologies? These questions remain insufficiently addressed. Therefore, future research could employ experimental designs and user experience measurements to further uncover the specific mechanisms through which these features influence audience cognition, emotion, and behavioral intention.

Modes of Transmission

In terms of dissemination methods, studies indicate that digital museums, online exhibitions, and cross-border communication are the most common pathways, reflecting the dual characteristics of institutionalization and networking in virtual display (Dunyi, 2023). However, existing research often treats dissemination methods merely as choices at the channel level, lacking in-depth analysis of their communicative effects and audience acceptance(Yuxin & Dayan, 2025). For example, how does cross-border communication trigger both identification and misinterpretation in different cultural contexts? Do digital museum platforms have a lasting impact on education and cultural identity? These questions remain insufficiently addressed. Future research may draw on perspectives from communication studies and user research to further examine how virtual display reproduces cultural value and facilitates cross-cultural understanding in the context of globalization.

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Contribution

This study makes three main contributions. First, it systematically reviews and categorizes 158 CNKI-sourced articles, offering the most comprehensive mapping to date of virtual presentation methods for Chinese painting. Second, it identifies five key dimensions—technological types, modes of transmission, experiential features, application domains, and communication strategies, thereby providing a structured framework for understanding this field. Third, it highlights critical research gaps, including insufficient empirical validation, a lack of comparative studies across technologies, and limited attention to long-term cultural sustainability. By addressing these issues, the study advances theoretical understanding and offers practical insights for optimizing digital strategies in the preservation and dissemination of Chinese painting.

Future research could further explore how different virtual presentation technologies, such as virtual reality (VR), augmented reality (AR), and 360-degree video, affect users' perception of realism, aesthetic experience, and cultural identity. Further empirical research is needed to clarify the impact of interactivity, immersion, and emotional design on user experience. Furthermore, developing digital preservation standards and strengthening cross-platform communication strategies remain important areas of exploration. Ultimately, future research could investigate how audiences perceive cultural content through various communication channels.

Acknowledgement

I would like to express my sincere gratitude to the Kelantan Art Institute of Malaysia for providing valuable academic resources and a supportive research environment that made this study possible. My deepest appreciation also goes to my supervisor, Ts. Dr. Azlin Sharina Binti Abdul Latef, for her continuous guidance, insightful feedback, and unwavering encouragement throughout the research process. Without her support, this work would not have been accomplished.

References

Binbin, H. (2023). Exploration of the Cultural Inheritance Value of Northern Song Dynasty Landscape Painting from the Perspective of 3R Digital Art. *Research on Art Education*(06), 95-97. https://doi.org/Cnki:Sun:Msjy.0.2023-06-065

Can, Z. (2024). A Brief Analysis of the Digital Expression and Display of Traditional Chinese Painting. *Traditional Chinese Painter*(03), 89-91. https://doi.org/Cnki:Sun:Ghji.0.2024-03-021

d-art. (2025). *"Cultural China · A Tribute to Guangzhou": "Along the River During the Qingming Festival 3.0" Digital Art Exhibition Opens in Guangzhou*. https://www.d-arts.cn/article/article_info/key/MTE5OTQyMzE5MjKFuXVksKmgcw.html

Dunyi, Z. (2023). A Modern Interpretation of Traditional Painting Techniques in the Digital Art Era. *New Chu Culture*(25), 36-38. https://doi.org/10.20133/j.cnki.cn42-1932/g1.2023.25.011

Hall, S. (1997). The spectacle of the other. *Representation: Cultural representations and signifying practices*, *7*, 223-290.

Jangra, S., Singh, G., Mantri, A., Ahmed, Z., Liew, T. W., & Ahmad, F. (2025). Exploring the impact of virtual reality on museum experiences: visitor immersion and experience consequences. *Virtual Reality*, *29*(2), 84.

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014

Jiang, C., Jiang, Z., & Shi, D. (2022). Computer‐Aided Virtual Restoration of Frescoes Based on Intelligent Generation of Line Drawings. *Mathematical Problems in Engineering*, *2022*(1), 9092765.

Jianhua, G., & Yulian, C. (2022). Research on the Construction of China's Digital Governance Knowledge Graph Based on CNKI Data. *Operations Research and Fuzziology*, *12*, 1226.

Jin, S., Fan, M., Wang, Y., & Liu, Q. (2020). Reconstructing traditional Chinese paintings with immersive virtual reality. Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems,

Linbo, X., & Shunan, W. (2025). Viewing the Integration of Digital Technology and Traditional Art Through "Only This Green". *Popular Literature & Art*(08), 44-46. https://doi.org/10.20112/j.cnki.ISSN1007-5828.2025.08.014

Miao, C., & Mingjian, Z. (2023). A Comparative Study of Aesthetic Taste in Digital Museums and Artistic Conception Aesthetics of Chinese Painting. *Packaging Engineering*, *44*(08), 325-330. https://doi.org/10.19554/j.cnki.1001-3563.2023.08.034

Mingjin, L. (2022). Bibliometric Analysis of Domestic Art Exhibition Research Literatures Based on CNKI Database. *Ideas & Design Source*(04), 76-80. https://doi.org/Cnki:Sun:Cyjy.0.2022-04-014

Museum, P. (2025). *Zhang Zeduan Along the River During the Qingming Festival*. https://www.dpm.org.cn/collection/paint/228226.html

Shaojun, L. (2025). Study on the Integration and Innovation of Contemporary Digital Art and Traditional Painting. *Research on Art Education*(03), 79-81. https://doi.org/Cnki:Sun:Msjy.0.2025-03-027

Shuting, G. (2024). The Challenges and Innovations of Virtual Reality Technology to Traditional Painting Art Forms. *Shanghai Packaging*(02), 39-41. https://doi.org/10.19446/j.cnki.1005-9423.2024.02.012

Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of communication*, *42*(4), 73-93.

Tengfei, Z. (2023). VR painting transforms the spatial dimension of traditional painting. *New Beauty Domain*, *10*, 68-70.

Tong, Z. (2024). Research on the Digital Practice and Innovation Path of Contemporary Chinese Ink Painting. *Art Research Letters*, *13*, 29.

Tongge, Y., & Yao, X. (2023). Exploration of the Communication Paths of Chinese Traditional Painting from the Perspective of New Media Art. *Sichuan Theatre*(06), 132-136. https://link.cnki.net/urlid/51.1087.J.20230724.1628.063

Wang Xuran, Y. R., Cui Songze. (2023). The fusion of traditional painting and virtual reality imaging technology. *Footwear craftsmanship and design*, *3*(09), 171-173. https://doi.org/Cnki:Sun:Zwxe.0.2023-09-057

Xinran, H. (2023). Innovative Dissemination Paths of "Along the River During the Qingming Festival" in the Digital Reproduction Era. *Humanities Across the Globe*(12), 57-62. https://doi.org/10.16737/j.cnki.rwtx81281190.2023.12.011

Xinyi, L. (2023). A Study on the Mutual Support Between Digital Media Art and Contemporary Immersive Chinese Painting Exhibitions — Taking the "Painting Journey Through the Thousand-Li Rivers and Mountains" Art Exhibition as an Example. *Oriental Collection*(12), 61-63. https://doi.org/Cnki:Sun:Dfsc.0.2023-12-021

Xu, X., & Lu, W. (2024). Digital Preservation and Network Security Protection: A Case Study of Landscape Painting in Ming Dynasty. *J. Internet Serv. Inf. Secur.*, *14*(4), 249-262.

International Journal of Innovation and Industrial Revolution
IJIREV
EISSN: 2637-0972
Volume 7 Issue 23 (December 2025) PP. 199-213
DOI 10.35631/IJIREV.723014
Xu, Y., Tao, Y., Zhang, C., Xie, M., Li, W., & Tai, J. (2022). Review of digital economy research in China: a framework analysis based on bibliometrics. *Computational Intelligence and Neuroscience*, *2022*(1), 2427034.

Xue, H. (2023). Innovative Applications of Digital Media Art in the Modern Interpretation of Chinese Painting. *Popular Literature & Art*, *02*, 18-20.

Yi, Y. (2025). Analysis of the integration of traditional painting and virtual reality imaging technology. *Social Science Research and Practice*, *1*(5).

Yixin, Z. (2024). Preliminary Study on the Application of Mixed Reality Technology in the Spatial Context of Landscape Artistic Conception. *Footwear Technology & Design*, *4*(17), 156-158. https://doi.org/Cnki:Sun:Zwxe.0.2024-17-052

Yuxin, L., & Dayan, S. (2025). A Study on the Construction of Interactive Modes for the Digital Display of Plant Imagery in Song Dynasty Gongbi Flower-and-Bird Paintings. *Beauty & Times (Upper Edition)*(03), 113-116. https://doi.org/10.16129/j.cnki.mysds.2025.03.007

Zeqiong, L., & Xiangsheng, W. (2025). The Digital Presentation and Dissemination of Chinese Traditional Painting in the Intelligent Era. *Beauty & Times (Middle Edition)*(02), 123-125. https://doi.org/10.16129/j.cnki.mysdz.2025.02.025

Zhang, W., Zhang, J.-W., Wong, K.-K., Wang, Y.-F., Feng, Y.-C.-J., Wang, L.-W., & Chen, W. (2024). Computational approaches for traditional chinese painting: From the “six principles of painting” perspective. *Journal of Computer Science and Technology*, *39*(2), 269-285.