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Interactive Design Strategies for Digital Platforms Promoting Chinese Ceramic Culture

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Abstract

The transmission of Chinese ceramic culture relies heavily on cross-cultural interaction, which enhances cultural dissemination by fostering engagement and understanding among international audiences. Digital platforms play a crucial role in this process through virtual exhibitions, interactive participation, and user-generated content (UGC). Virtual exhibitions use immersive 3D technologies to overcome geographical barriers, offering realistic and interactive experiences, while interactive participation—such as gamified learning and creative workshops—deepens user engagement by allowing hands-on exploration of ceramic techniques. UGC modules enable users to share personal experiences, reflections, and creations, transforming them into active contributors to cultural dissemination. Understanding user motivations like self-expression, social interaction, and recognition is key to fostering participation. By combining these elements with multilingual support and innovative design, digital platforms can effectively preserve and promote Chinese ceramic culture globally, creating an accessible and engaging cultural ecosystem.

Keywords

Ceramic culture, digital platform, virtual exhibition, interactive participation, UGC.

1. Introduction

In the process of globalizing Chinese ceramic culture, cross-cultural interactions are one of the important approaches. Interactivity not only bridges the gap between a culture and foreign audiences but also enhances the effectiveness of cultural dissemination, allowing viewers to deeply engage in the experience and understanding of ceramic culture. From the perspective of communication, interactive design provides participants in varied activities with three important merits: entertainment, role-playing, and communication [1]. Cross-cultural interaction allows participants to be both performers and audience members, thus creating profound memories and greatly improving the effectiveness of information dissemination. In the digital context, cross-cultural interactive design can encompass modules such as virtual exhibitions, digital games, user-generated content (UGC) platforms, and social interactions. Through diverse and immersive forms of interaction, it enhances the appeal to and engagement with Chinese ceramic culture among international audiences. Of course, cross-cultural interaction must be based on multilingual support to be effective. In a sense, the online digital platform for ceramic culture must be a systemic project accessible to international audiences. To this end, a few principal features including virtual exhibition, interactivity, and user-generated content must be taken into account in building of the platform.

2. Virtual Exhibition

Virtual exhibitions are a core form of digital interactive strategy, breaking geographical limitations and allowing global audiences to “immersively” visit ceramic exhibits and historical scenes. Virtual exhibitions provide a highly immersive platform for cross-cultural

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dissemination of ceramic culture through rich visual effects, realistic spatial simulations, and diverse interactive functions.

To this end, it is advisable that digital platforms adopt the currently mature immersive 3D spatial design. 3D technology research and use in western countries predates China's, such as the well-established Google Arts & Culture digital galleries. Currently, although China has built specialized digital ceramic museums and virtual ceramic exhibition halls, such as Jingdezhen China Ceramics Museum, digital exhibition hall of the National Museum of China, the digital treasure gallery of the Palace Museum, and several local ceramic museums that are progressively expanding their digital initiatives. However, many of China's digital exhibition halls face challenges such as limited user-friendliness, a lack of strong cross-cultural communication awareness, and underutilization of technological advancements in supporting the growth of the ceramic industry and culture [2].

In response, many scholars advocate for leveraging digital technology to create digital ceramic culture museums and virtual environments, enhance interactive experiences, and foster the seamless integration of technology and culture [3-5]. Therefore, the future trend should focus on the digital transformation of ceramic exhibition halls and, ultimately, entire museums.

The design of digital exhibition halls should prioritize visual and spatial experiences by creating immersive environments using 3D modeling and panoramic technology. Visitors can navigate freely through virtual exhibition spaces, selecting destination halls and interacting with exhibits by zooming or rotating them for multi-angle viewing. Pop-up boxes and multimedia explanations, triggered by visitor interaction, should provide in-depth information about the historical background and manufacturing techniques of ceramic pieces, enhancing both the enjoyment of exploration and the accessibility of information.

Virtual exhibitions should integrate text, voice, video, and other multimedia formats to deliver rich, multi-layered cultural content. Each exhibit should feature an interactive area that, when clicked, activates text explanations or audio/video commentary in the visitor's preferred language. These explanations, provided by professional narrators, offer insights into the historical and cultural background of the ceramics, enhancing the visitor's understanding and engagement.

The virtual exhibition platform should curate themed exhibitions focusing on specific historical periods or ceramic traditions. Themes such as "Ding Kiln White Porcelain of the Song Dynasty" or "Jingdezhen Blue and White Porcelain" can be developed, allowing visitors to select and explore topics of interest. This thematic approach enables a deeper understanding of the historical evolution and regional characteristics of ceramics. By guiding visitors through immersive virtual experiences, the platform facilitates a gradual and systematic exploration of Chinese ceramic culture.

3. Interactive Participation

At a project seminar in 1984, IDEO co-founder Bill Moggridge first articulated the core concept of interaction design, emphasizing that the focus of design had shifted from products to user experience, with emphasis on human behavior and interaction patterns. In the process of ceramic culture dissemination, interactive participation design plays a crucial role in enhancing user experience and entertainment, enabling users to acquire knowledge and enhance cultural identity through various forms of interaction.

Interactive games can significantly enhance audience engagement, allowing participants to experience the meaning and cultural significance of exhibits and events firsthand, thereby promoting effective knowledge dissemination [6]. As a vital element of interactive ceramic culture exhibitions, these games foster an intuitive understanding of ceramic techniques and traditions by involving users in simulated ceramic-making, design processes, and historical

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reconstructions. For instance, ceramic-making simulation games can guide users through essential steps such as throwing, glazing, and firing within a virtual environment. This hands-on experience educates players about the intricacies and precision required in ceramic production. During the throwing phase, for example, users can manipulate virtual clay to control its shape and thickness, replicating real-world pottery techniques. These interactive experiences not only entertain but also provide immersive cultural insights, deepening participants' appreciation and understanding of ceramic artistry.

The platform should incorporate virtual ceramic design workshops, offering users an interactive digital space to unleash their creativity and design unique ceramic pieces. Users can experiment with various glazes, colors, and patterns, combining elements to craft personalized ceramic artworks, which can then be showcased on the platform. This creative process not only fuels cultural imagination but also immerses users in the artistic traditions of ceramic craftsmanship. Additionally, the design workshop should integrate social sharing features, enabling users to publish and share their creations on social media. By fostering interaction and dialogue, this functionality enhances user engagement and broadens the reach of ceramic culture, contributing to its wider dissemination and appreciation.

The platform can amplify ceramic cultural education through engaging interactive formats like knowledge quizzes and themed challenges. By structuring quiz content across multiple dimensions—from ceramic origins to influential artisans and masterworks—users encounter a thoughtfully designed learning progression. The tiered difficulty system, combined with strategic reward mechanisms, transforms cultural education into an engaging journey of discovery. Through a points-based achievement system and virtual incentives, participants are motivated to deepen their ceramic knowledge. This gamified approach not only sustains user interest but also creates effective pathways for transmitting ceramic cultural heritage, making complex historical and artistic concepts more accessible and memorable.

Furthermore, social media is an important channel for cross-cultural interaction. By aligning with modern users' social habits and interaction preferences, a multi-layered ceramic culture dissemination network can be built through digital platforms and social media interactions. This network can include short videos and live broadcasts, platform forums, interest-based groups, and community activities. Using international social media platforms such as X, YouTube, Instagram, and TikTok, short videos and live broadcasts can regularly publish ceramic-making processes and historical introductions. Short videos attract user attention with engaging bite-sized content, while live broadcasts provide opportunities for real-time interaction. Viewers can ask questions in the comments section and engage directly with hosts or ceramic experts, thereby enhancing the interactivity and immediacy of cultural dissemination.

4. User-Generated Content

User-Generated Content (UGC), a concept introduced in 2005 by the online publishing and new media sectors [7], has transformed audience engagement. Beyond simply visiting exhibitions or participating in museum activities, audiences can now share their experiences, express their ideas, contribute insights, and showcase their creations, fostering deeper involvement in various museum affairs. Integrating a UGC module into a ceramic digital display platform offers users an open and interactive space to create and engage with ceramic cultural content. This approach not only enhances user participation but also positions them as active contributors to the dissemination of cultural heritage.

The UGC module enables visitors to share their ceramic museum experiences and artwork appreciation through videos and photos, along with written reflections. This interactive platform allows the community to engage through likes and comments, fostering meaningful

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discussions about ceramic arts. To maximize user participation, it's crucial to understand the underlying motivations that drive users to contribute content. Research by Lenhart and Fox and Bughin has revealed that blog authors and video content creators are primarily motivated by the desire to share experiences, gain recognition, and participate in social interactions, rather than by practical or monetary benefits [8,9]. Through this platform, users can express their unique perspectives on ceramic culture using diverse media formats, creating a rich tapestry of shared experiences and interpretations.

The digital platform's design should therefore align with users' core motivations and needs, supported by targeted incentives to cultivate sustainable engagement patterns. We propose two dedicated spaces within the UGC section: a "Ceramic Stories" gallery and a "Ceramic Works Exhibition." The Ceramic Stories gallery provides a narrative space where users can share personal connections to ceramic heritage, such as family traditions or transformative museum experiences. Meanwhile, the Exhibition area serves as a visual showcase where visitors can display their museum photography and share video reflections on ceramic pieces. Both spaces facilitate community dialogue through interactive features like comments and appreciation indicators, creating an interconnected ecosystem of ceramic enthusiasts. This structured yet fluid approach encourages organic content creation while maintaining focus on meaningful cultural exchange.

Platform administrators should actively engage with user contributions through likes, comments, and cross-platform sharing, providing valuable recognition that encourages continued participation. To deepen engagement, the platform can introduce hands-on "Ceramic Making Challenges" that invite users to explore fundamental ceramic techniques, from designing blue and white porcelain patterns to virtual pottery throwing exercises. Recognition through honorary titles such as "Ceramic Master" can reward active participants and inspire continued involvement. Research by Hu Fang and Li Xiaohong confirms that meaningful interaction between museums and their audiences, coupled with institutional acknowledgment and certification, significantly enhances user motivation and participation [10]. This multi-faceted approach creates a dynamic environment where engagement is both celebrated and sustained.

5. Conclusion

The digital transformation of Chinese ceramic culture dissemination offers a comprehensive strategy for engaging global audiences through three key pillars. Virtual exhibitions form the foundation, leveraging 3D modeling and panoramic technologies to create accessible, multilingual experiences that closely mirror physical museum visits. This foundation is enhanced by interactive participation design, which incorporates gamification and creative workshops to deepen users' understanding of ceramic techniques and historical significance through hands-on engagement. The integration of user-generated content platforms adds a vital community dimension, enabling participants to share personal experiences and interpretations that enrich the cultural narrative beyond traditional curatorial perspectives. To maintain the effectiveness of these digital initiatives, several critical factors require ongoing attention: technological infrastructure must be continuously updated, content regularly refreshed, community engagement actively managed, and user data thoughtfully analyzed to guide improvements. Through this multifaceted digital approach, Chinese ceramic culture can achieve unprecedented global reach, fostering cross-cultural understanding and appreciation while preserving this invaluable cultural heritage for future generations in our interconnected world.

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