Research on Interactive Exhibition Design in Art Museums Based on Audience Participation

Jiaxin Wang
Taipei National University of the Arts, Taipei, Taiwan.

How to cite this paper: Jiaxin Wang. (2024) Research on Interactive Exhibition Design in Art Museums Based on Audience Participation. Journal of Humanities, Arts and Social Science, 8(4), 976-980. DOI: 10.26855/jhass.2024.04.028

Received: March 31, 2024
Accepted: April 30, 2024
Published: May 29, 2024

*Corresponding author: Jiaxin Wang, Taipei National University of the Arts, Taipei, Taiwan.

Abstract

The ultimate goal of art communication is to foster public acceptance of art culture. Art galleries play a crucial role in this communication process by catering to and promoting the diverse needs of audiences. With the advancement of digital technology, museums have more possibilities for exhibit display and collection management. The traditional functions of museums have evolved, raising questions about how digital displays can be planned and presented to enhance learning among visitors. What factors should be considered in the interaction design of digital devices within exhibition venues? This shift in presentation style has transformed museums from merely displaying collections to potentially being standalone pieces of art themselves. Compared to static cultural commemorative exhibitions, digital interaction stimulates visitors’ senses in various ways. Art museums benefit from enhanced lighting, sound, identification, and tactile experiences, which offer additional avenues for acquiring information. This paper, based on "museology" theories, discusses user participation and design in interactive art museum exhibits, analyzing the significance of interactive installations in art exhibitions and the future direction of art exhibitions.

Keywords

Art Museums, Interactive Exhibitions, User Experience, Design Framework

Since the 21st century's advent of "New Museology" (Vergo, Peter, ed., 1989), the function of museums as cultural institutions has been reevaluated. "The New Museology" presents various topics around museum history, theory, and practice. These essays represent a significant shift from focusing on museum methods to examining the purpose, social responsibility, and visitor experience quality in museums. In this discourse, art museums are often seen as the least accessible in terms of cultural democracy. The failure of art museums to attract broader audiences remains underexamined and has not widely catalyzed changes in professional practice in curation, education, or public programs. Thus, digital exhibitions might offer more possibilities to attract a wider audience.

Compared with traditional cultural memorial exhibitions, digital interactive uses advanced technologies such as rich lighting effects, surround sound, image recognition, and touch screens to provide a new type of visitor experience that breaks the shackles of traditional exhibitions and enables audiences to interact with art in an immersive environment, greatly increasing participation and interactivity. For art galleries, the use of such technology can appeal to a wider audience, especially the tech-driven younger generation, who tend to seek more dynamic and interactive experiences.

1. "Display" and "Viewing" in Art Museums

Moreover, digital displays have made exhibitions less dependent on the quality of the collections. Modern display concepts have shifted to engaging installations that may or may not include physical objects. For example, the 2023
Shanghai Expo Museum's "Van Gogh Reimagined" immersive light show, used large screens to recreate Van Gogh's classic works. These installations not only fascinated Van Gogh enthusiasts but also made his paintings more accessible to those less familiar with his work.

Traditionally, museums have been seen as places to collect and display physical exhibits, with their value and definition often directly related to their physical collections. Modern museums focus not just on collecting and displaying objects but on providing rich visitor experiences and interactivity. With the evolution of technology, particularly the introduction of digital interactive technology, museums have undergone significant changes in display methods and visitor engagement strategies. Museum education scholar Eileen Hooper-Greenhill suggests that museums are not just places for collecting and displaying relics but complex communication spaces where artifacts are imbued with new meanings and conveyed to the audience in various ways. Thus, how museums use displays and interpret visual culture to educate and attract the public is crucial.

Hooper-Greenhill emphasizes that visuals are not just about identifying objects but can be effective communication tools that tell stories, convey information, and trigger emotional responses. Bourdieu points out that cultural capital is transmitted and reproduced within specific social classes and knowledge boundaries, and digital interactive installations in art exhibitions allow artworks to interact with the audience beyond just "viewing the original".

Interactive Exhibitions in Art Museums: Interactive exhibitions in art museums employ interactive design and technological means to actively engage viewers with the artworks. Unlike traditional museum exhibitions where viewers passively observe art, these interactive exhibitions integrate virtual reality, augmented reality, gesture recognition, and touchscreen technologies, offering visitors a more immersive exhibition experience. Several forms and technologies are adopted to meet the audience's participation needs and the thematic requirements of the exhibition. Virtual reality technology creates virtual art spaces, allowing visitors to explore artworks in an immersive manner. Gesture recognition and touch screen technologies enable viewers to interact with artworks through gestures and touch. Augmented reality technology overlays virtual elements onto the real environment, providing rich visual effects. Combining Nina Simon's theory of the "Participatory Museum," audience participation in art exhibitions can be enhanced in five aspects to improve exhibition interaction:

a) Immersive and Interactive Experience: By using touch screens, augmented reality (AR), and virtual reality (VR) technologies, visitors can interact directly with the artwork, providing an immersive experience. Design immersive elements of touch, sound, and vision to inspire the viewer's sensory experience. The application of these technologies makes the audience experience more personalized and engaging.

b) Participatory Creation: In digital interactive exhibitions, viewers' actions or choices can directly influence how the artworks are presented, making them part of the creative process. Such design ensures that each visitor's experience is unique.

c) Enhanced Social Interaction: Digital interactive art exhibitions also encourage social interaction among visitors, such as through multi-person interactive segments that foster sharing and discussion, helping to build connections and dialogue within the community.

d) New Ways of Education and Learning: These exhibitions provide new learning methods for visitors, allowing them to gain a deeper understanding of the background and creative process of artworks through interactive experiences, making the learning process more vivid and interesting.

e) Opportunities for Cultural Participation: In line with the concept of participatory museums, digital interactive art exhibitions can be designed to allow visitors to contribute their content or stories, making them active participants in cultural creation and dissemination.

2. Design Strategies for Interactive Exhibitions in Art Museums

Participatory exhibition design shapes an engaging learning environment in museums, stimulating public interest in art, history, and culture. Compared to traditional exhibitions, interactive exhibits can better provide customized content based on audience behavior and preferences, creating a more personalized museum visiting experience. Additionally, these technologies help viewers better understand the contents of the exhibition by presenting information in a vivid and engaging way, using mobile apps or audio-guided devices to provide a deeper interpretation of the artwork and the story behind it, helping visitors better understand the cultural and historical context of the exhibits. Interactive exhibitions in art museums introduce innovative display methods, combining interactive design and technology to offer richer, more captivating experiences to visitors.
Enhancing Sensory Experiences for Visitors: Display differs from mere presentation. Presentation implies passivity, where the audience defines the meaning of the display. For example, the Qinghua porcelain exhibition at the Forbidden City displayed various pieces chronologically. The meaning beyond this arrangement is left for the audience to discern. Traditional displays fail to showcase the evolving value of these items. Digital displays, however, allow visitors to zoom into specific parts of a painting like Van Gogh’s strokes, even down to the layers of color, offering a deeper visual experience than the naked eye. The high contrast and resolution of screens in digital displays can enhance the color saturation and contrast of “Starry Night,” allowing audiences to feel the dynamism of Van Gogh’s colors (Vergo Peter, 1989).

Audience participation is enhanced in several ways: (1) Touch Interaction: Digital displays with touch screen technology allow visitors to explore various aspects of a painting, such as its background story or the artist’s biography. (2) Dynamic Interpretation: Animations or video narrations assist in understanding each element’s symbolic meaning in the artwork, like the dynamic demonstration of Van Gogh’s swirling star nebulae, enhancing comprehension of the painting’s dynamic beauty. (3) Enhanced Auditory Experience: Environmental sound effects, like night insects or wind, provide an immersive auditory backdrop, recreating the environment depicted in the artwork. Synchronized audio narrations guide visitors to understand the history and artistic value of the painting, catering to multilingual needs. (4) Deepening Emotional Resonance: Digital displays can design various visual and sound scenes to guide viewers into the artist's emotional state during creation, increasing emotional resonance with the audience.

In summary, digital display technologies not only provide richer information and background knowledge but also activate sensory experiences in new ways, especially in visual and auditory aspects. These technologies rejuvenate classic artworks like "Starry Night," offering a novel, interactive appreciation method. The 2021 Forbidden City and Tencent co-hosted exhibition "‘Wen’ to Convey the Way—Forbidden City Tencent Immersive Digital Experience Exhibition” in Shenzhen displayed static artifacts like the Four Seasons Landscape Transforming Neck Bottle and Polychrome Fish and Algae Pattern Lidded Jar in dynamic forms through digital technology. Huge screens used for 3D digital displays revealed more details, immersing visitors in the patterns. This digital recreation allowed visitors to explore according to their interests, but the exhibitor’s intent still guided the understanding. The enrichment of visual and control aspects enhances the sensory dimensions of the exhibition (Simon & Nina, 2010).

3. Interactive Design and Reflection in Art Exhibitions

Constructivism posits that learning is an active, constructive, experience-based process influenced by individual cognitive frameworks and motivations. Therefore, presenting artworks through digital interaction offers a richer and more diverse experience, enhancing the depth and retention of learning while accommodating the needs of different audiences (Berger & John, 1972). This approach can deepen personal understanding of artworks, evoke emotional
responses, and may inspire visitors to continue exploring and learning after their museum experience. In summary, in the design of interactive installations in art museums, it's crucial to focus on simplifying the user interaction workflow as a key strategy to enhance user experience. A clean, intuitive interactive interface can reduce the learning and operation costs for users, making it easier for them to engage with interactive elements. Well-organized layouts and visual cues enable users to quickly understand the interface's functionality and operation. Moreover, providing clear instructions and feedback is vital to streamline the workflow. Clear guidance and timely feedback can ensure accurate interaction and enhance visitors' engagement and adaptability (Baxandall & Michael, 1984).

Secondly, in contemporary art exhibitions, the construction of dialogue context is not only to present the space and exhibits but also to take into account the participation and feedback of the audience, forming a dynamic two-way communication. In it, situational dialogue is cleverly introduced as a mode of interaction designed to simulate real conversation scenes and create opportunities for visitors to interact directly with virtual characters or artists. Through situational dialogue, visitors are able to share their unique views on the artwork, ask questions, and even participate in the process of artistic creation. The core goal of this design strategy is to break down the traditional barrier between visitors and artworks and to stimulate the audience's emotional engagement and immersion, so that they are no longer passive viewers, but active participants in the exhibition. This interactive approach not only provides the audience with a deeper understanding and perception of the art, but also injects a richer layer and dynamic into the exhibition. The views and questions of the audience become part of the exhibition, adding life and vitality to the entire art space. The exhibition is no longer a static place of display, but a social space filled with dialogue and resonance.

In this way, the exhibition is not only more attractive, but also becomes a real cultural exchange platform. A closer connection between the audience and the artwork has been established, making art no longer limited to the work itself, but a carrier of interaction and resonance with people. Such a design not only enhances the value of the exhibition but also brings a richer and deeper artistic experience to the audience (Lu Runcai & Li Xiaohong, 2023).

Besides interactive design, content design in exhibitions is also key to attracting visitor participation. The content design of the exhibition needs to consider how to engage the audience and stimulate their thinking and perception. Through meticulous planning and multimedia displays, using multimedia interactive devices, virtual reality, and other technologies, exhibitions can present innovative and captivating content, stimulating visitors' interest and involvement. Utilizing multimedia technologies like videos, audio, and projections, exhibitions can offer more diverse presentations, allowing visitors to engage with multiple senses. This design is not just to inform, but to create a resonant and immersive experience that enables the audience to gain a deeper understanding of the art in their participation. Emphasizing the narrative of content and the nature of interaction, engaging narratives and guided display methods enable visitors to delve deeper into the stories behind the artworks and the artists' intentions, stimulating their thinking and imagination (Fang Wei & Gong Xuan, 2023).

4. Conclusion

Audiences are no longer passive viewers but actively engage and interact with artworks. This article aims to explore the concept, forms, and characteristics of interactive exhibitions in art museums, as well as the significance of user experience. Additionally, it provides a design framework and strategies to assist museum designers and curators in effectively utilizing interactive design elements and principles in exhibition design, enhancing audience participation and the overall appeal of exhibitions. Interactive exhibitions in art museums offer visitors participatory and personalized experiences by integrating interactive design and technological elements. Effective user experience design and innovative exhibition strategies are key to the success of interactive exhibitions. Enhancing tactile experiences, simplifying user workflows, emphasizing contextual dialogue, and highlighting content design can increase visitor engagement and satisfaction, creating a rich and immersive exhibition experience. In interactive exhibitions, the fusion of technology and art provides a unique platform for visitors to explore, interact, and deeply engage in the artistic process. By allowing visitors to touch and feel the texture of artworks, simplifying interactive interfaces, facilitating dialogues with virtual characters or artists, and showcasing captivating content, interactive exhibitions bridge the gap between the audience and artworks, promoting a deeper understanding and appreciation of art. The design framework outlined in this article offers a roadmap for creating interactive exhibitions in art museums. By considering themes, target audiences, interactive elements, user experience flows, and immersive environments, art museums can transform traditional exhibitions into dynamic and interactive experiences. This not only attracts a wider audience but also enriches their artistic journey, fostering a sense of connection and dialogue between the audience and the artworks. In summary, interactive exhibitions in art museums provide a new paradigm for art engagement.

DOI: 10.26855/jhass.2024.04.028
References