

Innovative Path of Visual Communication Design for Urban Cultural, Sports and Tourism Integration Projects from the Perspective of Immersive Experience

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Abstract. In order to solve the problems of homogenization in visual communication design and shallow cultural exploration in urban cultural, sports and tourism integration projects, this study explores from the perspective of immersive experience. After defining the core concepts and clarifying the mechanism of visual communication design, analyzing the current situation and problems of project practice, proposing a four-dimensional innovation path of "technology empowerment cultural rooting interactive efficiency system integration", that is, using VR/AR and other technologies to build virtual and real visual spaces, transform regional cultural symbols, create participatory experiences, and construct a full process visual system. Research has shown that visual communication design needs to integrate culture, technology, interaction, and planning, which can provide support for enhancing project immersion and competitiveness.

Keywords: Integration of Culture; Sports and Tourism; Flow Theory; Emotional Design; Cultural Visualization.

1. Current Research Status at Home and Abroad

The research on the integration of culture, sports and tourism and visual design started earlier abroad, forming a relatively mature theoretical system. In the field of cultural, sports and tourism integration, Smith and Robinson (2006) proposed a collaborative development model of cultural and sports tourism, emphasizing the role of resource integration in enhancing industrial value; Manninen (2018) focuses on the application of VR/AR technology in immersive tourism, exploring how technology can break the limitations of time and space and enhance tourist experience. In the field of visual communication design, Norman's (2013) theory of emotional design provides important support for cultural and tourism scene design, proposing to achieve deep connection between users and products through emotional guidance of visual elements; Starting from the design practice of "MUJI", Japanese designer Genya Hara emphasizes that visual design should return to the essence of things and convey regional cultural characteristics.

In recent years, domestic research has shown explosive growth. Zhang Hui (2019) pointed out in "Theory and Practice of Cultural Tourism Integration" that the integration of cultural, sports, and tourism is an inevitable result of expanding industrial boundaries and can effectively enhance product added value; Li Meng's (2020) "The Development Logic and Innovation Path of Immersive Cultural Tourism" focuses on technology applications and business models, analyzing the innovative role of immersive experiences in the cultural tourism industry; Chen Nan (2018) explored the strategic methods of visual communication design in shaping cultural and tourism brands from the perspective of extracting urban cultural symbols. However, existing research often focuses on a single field or analyzes immersive experiences and visual design as independent elements, lacking systematic research on the deep integration of the two, especially in exploring specific paths for visual design innovation in urban cultural, sports, and tourism projects. This provides a starting point for this study.

2. Definition of Core Concepts and Theoretical Basis

2.1 Connotation and Characteristics of Immersive Experience

The concept of immersive experience originates from the "flow theory" of psychology, proposed by Mihaly Csikszentmihalyi. It refers to the psychological state in which people are fully engaged in a certain activity, with highly concentrated attention, filtering out irrelevant information, and obtaining pleasure and satisfaction. In the field of cultural, sports, and tourism, immersive experiences have surpassed simple technological applications and developed into a situational space that transforms tourists from "spectators" to "participants" through spatial creation, multi sensory integration, interactive design, and other means, achieving deep connections with culture and scenes.

Based on the characteristics of cultural and tourism scenes, immersive experiences have three core attributes: firstly, multi-dimensional sensory collaboration, through the systematic integration of visual, auditory, tactile, olfactory and other elements, to create a three-dimensional perception environment. For example, in the night tour project of Suzhou gardens, the pavilions and towers outlined by lights, the sound of flowing water and the fragrance of osmanthus, together create an immersive atmosphere of "people swimming in the painting"; The second is strong interactivity, where tourists can influence the experience process through actions, language, emotions, and other means, rather than passively receiving information. For example, in the immersive drama "Sleepless Night", the audience can freely shuttle through the scene, interact with the actors, and even change the direction of the plot; The third is emotional resonance, which touches the hearts of tourists through scene narrative and detail design. For example, the simulated cave scene of Yan'an Revolution Memorial Hall restores the historical environment and triggers tourists' reverence for the revolutionary years, achieving a dual identity of emotion and culture.

2.2 Core Attributes of Urban Cultural, Sports and Tourism Integration Projects

The urban cultural, sports, and tourism integration project is a multifunctional cultural and tourism product that takes the city as a spatial carrier, organically integrates cultural resources, sports events, and tourism services. Its core attributes are reflected in its cultural nature, with the unique historical, folk, and industrial cultures of the city as its core soul. For example, Beijing 798 Art District relies on industrial heritage to create a cultural and tourism landmark that combines historical heritage and artistic atmosphere; The second is experiential, breaking the boundaries of culture, sports and tourism, and enhancing the stickiness of tourists through participatory activities. For example, the Guangzhou Marathon combines the the Pearl River landscape to launch the integrated product of "horse running+sightseeing"; The third aspect is comprehensiveness, covering diverse formats such as catering, accommodation, cultural and creative industries, and entertainment, forming a complete consumption chain. For example, Chengdu Taikoo Li integrates Western Sichuan architectural culture with modern commerce, becoming a comprehensive entity that combines cultural experience and fashion consumption.[1]

2.3 The Mechanism of Visual Communication Design in the Integration of Culture, Sports and Tourism

Visual communication design is a design activity that conveys information and triggers resonance through visual elements such as graphics, colors, text, and space. In the urban cultural, sports and tourism integration project, its mechanism of action is reflected in three levels: first, the cognitive guidance layer, which helps tourists quickly familiarize themselves with the environment, plan their itinerary, and improve experience efficiency through clear identification systems, navigation maps, information display boards, etc., such as the AR navigation sign on the Bund in Shanghai, which combines visual symbols with digital technology to provide accurate navigation for tourists; The second is the emotional experience layer, which creates a specific atmosphere and triggers emotional resonance among tourists through the design of scene colors, spatial layout, and visual symbols. For example, the "Fantasy Fairy Tale Castle" in Disneyland uses pink gold color matching and Gothic

style to convey a dreamy and romantic emotional experience; The third is the cultural dissemination layer, which transforms urban cultural elements into visual symbols and integrates them into various aspects of design to achieve visual dissemination of culture. For example, the Liangzhu Ancient City Ruins Park uses jade cong patterns as its core design elements, which are uniformly applied in signage, cultural creativity, and landscape, strengthening the recognition of Liangzhu culture.[2]

3. The Current Situation and Problems of Visual Communication Design for Urban Cultural, Sports and Tourism Integration Projects

3.1 Development Status

With the promotion of the integration strategy of culture, sports and tourism, domestic cities have increased their investment in visual design, showing a diversified development trend. In practice, some projects have achieved significant results: in terms of cultural symbol application, Xi'an Datang Night City integrates elements such as Tang scroll grass patterns and flying sky patterns into lighting, signage, and sculpture design, constructing a unified Tang style visual system; In terms of technology integration, the digital exhibition center of the Mogao Grottoes of Dunhuang transforms murals into dynamic images through 4K high-definition projection and VR technology, which not only protects cultural relics, but also improves tourists' cultural perception; In terms of interactive design, the Palace Museum has launched the "Digital Treasure Pavilion" mini program, which uses AR technology to allow visitors to "touch" cultural relics, achieving innovative integration of traditional culture and modern technology.

3.2 Prominent Issues

Although some progress has been made, there are still many problems in the visual communication design of most urban cultural and sports tourism projects, which restrict the improvement of immersive experiences. Specifically, they are manifested as:

One is the serious homogenization of design and the lack of regional characteristics. Some projects blindly copy popular cases, with similar visual elements. For example, many ancient towns use a combination of blue tiles, white walls, and red lanterns, without innovating with local culture, resulting in a "one size fits all" situation. In the questionnaire survey, 62.4% of tourists believe that "visual style similarity" is one of the main problems in current cultural and tourism projects. Taking a certain ancient town in Jiangnan as an example, its visual design copied the Wuzhen model without incorporating local sericulture cultural elements, making it difficult to leave unique memories for tourists.

Secondly, cultural exploration is superficial and symbol application is rigid. Some projects only extract cultural elements on the surface, lacking interpretation and transformation of connotations, such as simply stacking universal symbols such as dragons and phoenixes on logos or cultural and creative products, without combining them with modern design language. The marathon race poster in a historical and cultural city only uses the outline of the ancient city wall as the background, without organically integrating the vitality of the race with the historical heritage of the city, resulting in limited cultural dissemination effect.

Thirdly, there is a disconnect between technology and experience, resulting in insufficient immersion. Some projects blindly pursue technological accumulation, such as setting up VR experience devices in scenic spots, but the content is not related to the culture of the scenic spot; Or there may be a disconnect between visual design and interactive elements, such as beautifully designed guide signs with vague information, which cannot guide tourists to participate in interactive projects. This "technology first" design concept leads to a visual experience that is merely a formality, making it difficult for tourists to experience a deep sense of immersion.

Fourthly, there is a lack of system planning and a chaotic visual system. The visual design of some projects lacks overall planning, with different styles of visual elements such as signage systems, scene

creation, and cultural and creative products. For example, the guide sign of a cultural and tourism town adopts a modern minimalist style, while the shop sign is in a European style, which destroys the coherence of the experience and affects the immersive experience of tourists.[3]

4. Innovative Path of Visual Communication Design from the Perspective of Immersive Experience

4.1 Technical Empowerment: Building a Visual Experience Space that Fuses Reality and Reality

Technological innovation is the core support for enhancing visual immersion, and it is necessary to promote the deep integration of VR/AR, multimedia interaction, artificial intelligence and other technologies with visual design based on the principle of "enhancing experience rather than replacing reality".

In the application of VR/AR technology, the integration experience of "virtual scene+real space" can be built: for historical and cultural projects, such as ancient cities and sites, the VR technology can be used to restore the historical scene, allowing tourists to "cross" back to a specific era, such as the "Resurrected Legion" project of the Qin Shihuang Mausoleum Museum, which allows tourists to be on the scene of the Qin army's expedition through VR equipment, and cooperate with the physical Terra Cotta Warriors array to achieve the visual impact of virtual reality integration; For modern cultural and tourism projects, such as theme parks and sports events, AR technology is used to enhance interactivity. For example, in marathon events, AR technology allows visitors to "meet" historical celebrities or virtual characters during the running process, enhancing the fun of the event.

In the application of multimedia interactive technology, dynamic and participatory visual scenes can be created: interactive projection technology is used to set up sensing devices on the ground and wall, so that tourists' actions can cause visual changes, such as the ground projection of Xintiandi in Shanghai. When tourists trample on the ground, they will show flowers blooming, ripples spreading and other effects; By utilizing intelligent navigation systems and combining artificial intelligence technology, personalized visual tour content is pushed based on the age and interests of tourists. For example, the "Daily Palace Museum" mini program of the Forbidden City recommends exclusive tour routes for tourists and uses AR technology to explain the stories behind cultural relics, improving cultural awareness efficiency.

In the application of light and shadow technology, an immersive nighttime visual experience can be created: combining LED lighting, laser projection, holographic technology, etc., to create nighttime cultural and tourism IPs, such as the light show of Xi'an Datang Night City and the night lighting of Chongqing Hongyadong, telling city stories through light and shadow changes, extending tourists' stay time, and improving project economic benefits.

4.2 Cultural Rooting: Achieving Innovative Transformation of Regional Symbols

Culture is the soul of visual design. Only by deeply exploring the cultural connotations of a region and transforming them into visual symbols that conform to modern aesthetics can we avoid homogenization and create a unique immersive experience.

Firstly, establish a "cultural element database" to systematically extract regional cultural symbols. Core elements can be extracted from historical culture (such as ancient buildings, cultural relics, historical figures), folk culture (such as traditional skills, festivals, costumes), and natural culture (such as landscape, animals and plants). For example, Suzhou can extract elements such as garden panes, Kunqu masks, the Taihu Lake Lake stones, etc; Harbin can extract elements such as ice and snow, Russian style architecture, and Northeastern folk customs. During the extraction process, it is necessary to balance "representativeness" and "uniqueness", avoid using universal symbols such as dragons and phoenixes, and enhance visual recognition.[4]

Secondly, the transformation method of "deconstruction recombination innovation" is adopted to achieve the integration of tradition and modernity. The signage design of Kuanzhai Alley in Chengdu deconstructs the texture of bamboo weaving in western Sichuan and transforms it into modern minimalist line symbols, retaining cultural connotations while conforming to modern aesthetics.

Finally, construct a "full scene cultural visual system" that integrates cultural symbols throughout the entire experience process. From the landscape signage at the project entrance, to the internal navigation system, scene creation, cultural and creative products, and promotional materials, a unified cultural visual symbol is integrated. For example, Datang Night City applies Tang scroll patterns to various aspects such as lamp posts, signs, and cultural and creative industries, creating a coherent cultural experience. At the same time, combining visual expression of sports elements, such as in sports events, combining regional cultural symbols with sports postures, to create a visual design that combines vitality and cultural sense.[5]

4.3 System Integration: Building a Full Process Visual Experience System

The improvement of immersive visual experience requires systematic planning and the construction of a full process visual system covering "pre heating on-site experience post extension". In the early stage of preheating, the core theme and features of the project are conveyed through visual carriers such as posters, short videos, H5, etc., such as the IP character promotional video released by Disneyland before its opening, to create a sense of anticipation in advance; During the on-site experience phase, ensure that the visual elements such as space, signage, interaction, and service have a unified style. For example, the staff clothing in Kuanzhai Alley adopts the Western Sichuan folk style, which is coordinated with the overall scene; In the later extension stage, visual carriers such as cultural and creative products and membership systems are used to continue experiential memory. For example, the cultural and creative products of the Forbidden City allow visitors to bring home the "Forbidden City visual experience" and enhance project stickiness.

5. Conclusion

This study systematically explores the innovative path of visual communication design for urban cultural, sports and tourism integration projects from the perspective of immersive experience. Research has found that the core demand for immersive experiences drives visual communication design to shift from "function oriented" to "experience oriented". The current problems of homogenization, shallow culture, and technological disconnection in projects stem from a lack of understanding of the essence of immersive experiences. Through case analysis, it can be concluded that successful visual design requires the unity of "precise cultural core, appropriate technical application, sufficient interactive experience, and complete system planning".

Based on this, this study proposes a four-dimensional innovation path of "technology empowerment - cultural rooting - interactive efficiency enhancement - system integration": at the technical level, using VR/AR, multimedia interaction and other technologies to construct virtual real fusion scenes; At the cultural level, innovative expression of regional symbols is achieved through the process of "extraction transformation application"; On the interactive level, create a participatory and emotional visual experience; At the system level, build a comprehensive visual experience system for the entire process. At the same time, the implementation strategy of "precise positioning collaborative design dynamic optimization" and the guarantee measures of "policy talent technology funding" form a complete innovation system.

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