

Article

Research on the Application Path of Emotional Design in the Improvement of User Experience in Hakka Museum

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Abstract: This research focuses on exploring the specific application path of emotional design in optimizing user experience in Hakka Museum. Through the in-depth analysis of the unique connotation of Hakka culture, the key significance of emotional design in the museum environment is expounded. From multiple dimensions such as exhibit display, space atmosphere shaping and story context construction, the paper discusses in detail how to skillfully integrate the emotional design concept into Hakka Museum, and is committed to providing theoretical support and practical guidance for enhancing users' understanding of Hakka culture, triggering emotional resonance, and promoting the cultural transmission of the museum.

Keywords: emotional design; Hakka Museum; user experience; Hakka culture; application path

1. Introduction

In contemporary society, museums are no longer merely places for collecting and researching cultural relics. As core venues for cultural inheritance and display, they shoulder the important missions of cultural dissemination and education. The key to achieving these missions lies in attaching great importance to the user experience, which helps to efficiently spread culture and make it deeply rooted in people's hearts. With the full arrival of the experience economy era, emotional design has gradually become the core strategy for enhancing the user experience in museums.

The Hakka Museum, as an important platform for comprehensively presenting Hakka culture, contains extremely rich and unique Hakka cultural resources. After hundreds of years of development and evolution, Hakka culture has integrated Central Plains culture and southern regional culture, forming a distinctive cultural system. How to use emotional design methods to stimulate users' strong interest in Hakka culture and prompt them to generate deep emotional identification has become an important issue urgently to be solved in the development process of the current Hakka Museum and even the entire museum industry. In-depth research in this field not only helps to improve the service quality and cultural influence of the Hakka Museum but also provides useful references for other museums in terms of cultural inheritance and user experience optimization [1].

2. Overview of Emotional Design and Museum User Experience

2.1. Theoretical Foundation of Emotional Design

The concept of emotional design was systematically proposed by Donald Norman in his book *Emotional Design*. This theory divides design into three levels: the visceral level, the behavioral level, and the reflective level [2]. Visceral-level design mainly focuses on the intuitive sensory stimuli brought by products or the environment, covering aspects

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such as appearance, material texture, and color matching. For example, a beautifully designed museum guidebook with a textured cover and artistic patterns can instantly attract users' attention and stimulate their instinctive interest.

The behavioral level is concerned with the operational convenience and functionality of users when using products or being in an environment. Taking the self-guided tour equipment in a museum as an example, its simple and clear operation interface and reasonable function layout allow users to easily query exhibit information and plan their visit routes, which is a specific manifestation of behavioral-level design.

The reflective level focuses on triggering users' deep-level memories, associations, and thoughts, thereby generating strong emotional resonances. For instance, a special exhibition on local history and culture in a museum, by displaying the daily items and related stories of the older generation, evokes visitors' memories of the past and triggers their emotional identification and value reflection on local culture. In the museum context, these three levels are not isolated from each other but are intertwined and work together to shape the overall user experience.

2.2. Connotation of Museum User Experience

Museum user experience is a comprehensive concept that encompasses multiple levels of feelings of users during the entire process of visiting the museum, from perception, cognition to emotion. At the perception level, information design is an important part of digital museum design, which mainly involves the representation and organization of the display content of digital museums, the navigation design of the system, interaction design, and interface design. Users form initial impressions of the museum's spatial environment and exhibit display through senses such as vision, hearing, and touch. For example, the soft and appropriate lighting in the museum can make the exhibits more vividly presented, bringing users a good visual experience [3].

The cognitive level involves users' acquisition and understanding of the knowledge and information contained in the exhibits. High-quality museum guided tours, clear exhibit description signs, etc., all help users to accurately and comprehensively understand the historical and cultural knowledge behind the exhibits.

The emotional level is the core of the user experience. The perspective of experience design theory is extensive, and it is still necessary to relate the experience concepts in different theoretical systems together [4], which is conducive to grasping the essential characteristics of experience and forming effective design practices. A good user experience not only lies in acquiring knowledge but also in establishing a deep emotional interaction between users and exhibits, space, and culture. When users are touched by the emotional stories conveyed by the exhibits during the visit or have a strong sense of identity with the cultural atmosphere created by the museum, they will leave a deep impression. This experience not only promotes cultural inheritance but also contributes to personal spiritual growth and the improvement of cultural literacy [5].

3. Analysis of the Connotation of Hakka Culture and Its Association with Emotional Design

3.1 Core Characteristics of Hakka Culture

3.1.1. Migration Culture

The Hakka ancestors experienced several large-scale migrations, moving from the Central Plains region to various parts of the south. This migration process has forged the Hakka people's spiritual qualities of perseverance and the courage to pioneer. During the migration, they carried the genes of Central Plains culture and continuously developed and evolved in the integration with local cultures. For example, the Hakka dialect retains a large number of ancient Chinese pronunciations and vocabulary, becoming a precious "living fossil" for studying the evolution of the Chinese language.

3.1.2. Clan Culture

The Hakka people attach great importance to the concept of clan. The clan system occupies an important position in Hakka society. The Hakka enclosed houses, as typical clan-inhabited buildings, have a rigorous internal structure with the ancestral hall as the core, and many family members live around the ancestral hall. This form of settlement not only demonstrates the unity and cohesion of the family but also reflects the Hakka people's respect and inheritance consciousness for their ancestors. Within the enclosed houses, family sacrifice activities, genealogy inheritance and other ceremonies are passed down from generation to generation, strengthening the continuity of clan culture.

3.1.3. Architectural Culture

The Hakka enclosed houses are well-known for their unique architectural styles. Most of the enclosed houses are circular or square, with thick walls and defensive functions. The internal space of the enclosed houses is reasonably laid out, integrating multiple functions such as living, sacrifice, and storage. Their architectural decorations are exquisite, with superb craftsmanship in woodcarving, stone carving, brick carving, etc. The themes are rich and diverse, including both auspicious patterns and story scenes reflecting family history and culture, fully demonstrating the Hakka people's aesthetic taste and artistic creativity.

3.1.4. Folk Culture

Hakka folk culture is rich and colorful, covering many fields such as festivals and celebrations, traditional handicrafts, and folk art. For example, during the Spring Festival customs of the Hakka people, activities such as dragon and lion dances and ancestor worship are extremely lively, filled with a strong festive atmosphere. Traditional Hakka handicrafts such as bamboo weaving and embroidery have exquisite techniques, and the products have both practicality and artistry. Hakka folk songs, as representatives of folk art, sing about the various aspects of the Hakka people's lives and their emotional world with their beautiful melodies and simple lyrics.

3.2. Hakka Cultural Elements as Emotional Design Materials

3.2.1. Cultural Symbols

There are many symbols in Hakka culture that are highly recognizable and rich in cultural connotations, such as the shape of the enclosed houses and the unique patterns on Hakka costumes. In museum design, skillfully applying these symbols to spatial decoration, exhibit display props, etc., can enable users to quickly identify and trigger associations with Hakka culture. For example, creating a large-scale enclosed-house-shaped arch at the museum entrance serves both as a landmark landscape and can guide users into the context of Hakka culture.

3.2.2. Colors

The use of colors in Hakka culture has distinct characteristics. For example, traditional Hakka costumes mostly use simple colors such as blue, black, and white, reflecting the hard-working and introverted character traits of the Hakka people. When creating the spatial atmosphere in the museum, reasonably using these colors, such as designing the exhibition area with blue as the main color and matching it with white exhibit description signs, can create a quiet and elegant cultural atmosphere, allowing users to resonate with Hakka culture in terms of visual perception.

3.2.3. Storytelling

There are countless touching stories behind Hakka culture, from the migration history of the ancestors to the family's entrepreneurial legends. These stories are valuable resources for emotional design. By connecting exhibits in the form of a story line in the museum or telling stories through multimedia means, it can stimulate users' emotional resonances. For example, producing an animated short film about the migration of Hakka ancestors and playing it in a loop in the museum allows users to more intuitively feel the formation process of Hakka culture.

4. Application Paths of Emotional Design in Improving the User Experience of the Hakka Museum

4.1. Exhibit Display Design Based on the Visceral Level

Optimizing Exhibit Display Layout, a scientific and reasonable exhibit display layout is the primary link in attracting users' attention. In the Hakka Museum, exhibits should be carefully arranged according to their historical context, cultural relevance, and importance. For example, a special Hakka migration exhibition area can be set up, where migration-related cultural relics such as maps, tools used during the migration, and letters from ancestors are displayed together. At the same time, through scene restoration, a realistic migration scene can be constructed, such as setting up a simple temporary camp and placing some simulated luggage items, allowing users to intuitively experience the hardships and perseverance of the Hakka ancestors during the migration. In the display layout, pay attention to the rhythm of space, reasonably set the density of exhibits, and avoid users from experiencing visual fatigue. By skillfully using the height and low arrangement of display cabinets and the changes in light brightness, guide users' lines of sight and create an attractive display space.

Innovation in Display Forms, With the rapid development of science and technology, multimedia technology has provided a broad space for the innovation of museum exhibit display forms. In the Hakka Museum, virtual reality (VR), augmented reality (AR), holographic projection and other technologies can be fully utilized to bring immersive sensory experiences to users. Taking VR technology as an example, developing an application program about Hakka traditional festival celebrations allows users to participate in activities such as dragon and lion dances during the Spring Festival and moon-viewing during the Mid-Autumn Festival in a virtual environment, interact with virtual characters, and feel the lively festival atmosphere. This innovative display form can greatly stimulate users' pleasant emotions and exploration desires. In addition, holographic projection technology can be used to present some precious cultural relics in a three-dimensional form, allowing users to observe the details of cultural relics from different angles and enhancing the attractiveness and expressiveness of the exhibits.

4.2. Spatial Atmosphere Creation Based on the Behavioral Level

Spatial Design and User Behavior: In-depth analysis of the behavior patterns of different user groups in the museum is the key to optimizing spatial design. For the children's group, who are lively, active, and curious, it is very necessary to set up a special children's interactive experience area in the museum. This area can be decorated with bright and vivid colors to create a lively and cheerful atmosphere. The display facilities should be designed to be low-lying and easy to operate. For example, some small touch-screen display devices can be set up to display interesting animations and small games related to Hakka culture, allowing children to learn Hakka cultural knowledge in a relaxed and happy atmosphere.

For the elderly group, they pay more attention to comfort and convenience during the visit. The museum should ensure that the visit route is flat and barrier-free, and set up a sufficient number of comfortable rest areas along the way, equipped with benches, water dispensers, and other facilities. At the same time, in the design of the signage system, use

larger fonts and bright colors to facilitate elderly users to identify. In addition, in view of the elderly users' deep affection for traditional culture, some special guided-tour activities can be arranged. Experienced docents can explain the historical origin and connotation of Hakka culture in an easy-to-understand way to meet the cultural needs of elderly users.

Environmental Atmosphere Creation, making full use of elements such as lighting, sound effects, and scents to create an environmental atmosphere that conforms to Hakka culture can enable users to better integrate into the cultural context during the behavioral experience. In terms of lighting design, different lighting effects can be adopted according to different display areas and exhibit characteristics. For example, when displaying the traditional Hakka farming scene, use warm yellow light to simulate sunlight, focus the light on exhibits such as farm tools and crop models, and create a warm and simple atmosphere. At the same time, cooperate with field insect chirping, bird singing and other sound effects to enhance the authenticity of the scene, making users feel as if they are in the countryside.

The use of scent elements can also bring unique experiences to users. In the area displaying Hakka food culture, by emitting simulated food scents such as the bean fragrance of stuffed tofu and the meat fragrance of preserved pork with pickled mustard greens, it can stimulate users' olfactory nerves and trigger their associations and emotional memories of Hakka cuisine. In addition, in the public areas of the museum, playing soft Hakka folk songs as background music can further set off a strong Hakka cultural atmosphere, allowing users to be subtly influenced by the culture while walking.

4.3. Storyline Construction Based on the Reflective Level

Cultural Story Mining and Telling, deeply mining the rich story resources behind Hakka culture is the basis for constructing an appealing storyline. The museum can organize professional cultural research teams to conduct field investigations in Hakka areas, collecting and sorting out folk legends, family stories, historical events, etc. Taking the life experience of a Hakka ancestor as the main line, relevant cultural relics, photos, documents, and oral historical materials can be organically integrated. For example, tell the story of a Hakka ancestor who overcame numerous difficulties with perseverance during the migration and finally established a business in the new land. By displaying the farm tools used by the ancestor, the family-inherited genealogy, the letters recording his deeds, and playing the video of the descendants' memories and interviews with the ancestor, users can comprehensively and deeply understand the Hakka cultural spirit such as perseverance, unity, and hard-work contained in the individual story, thus triggering users' emotional resonances and in-depth reflections on Hakka culture.

Interactive Communication and Emotional Sharing, setting up diverse interactive communication areas and encouraging users to share their understanding and feelings of Hakka culture is an important means to strengthen users' emotional identification. Set up a message wall in the museum, provide sticky notes and pens, and let users write down their feelings, questions, or unique insights about Hakka culture after the visit. At the same time, using modern information technology, build an online community platform where users can post the photos they took in the museum, write their visit travel notes, and interact with other users. Museum staff can also participate in it, timely reply to users' questions, guide discussion topics, and promote in-depth communication among users and between users and the museum. Through this interactive communication and emotional sharing, users can not only deepen their understanding of Hakka culture but also obtain emotional satisfaction and a sense of belonging in the communication with others, further strengthening their identification with Hakka culture and achieving the wide spread and inheritance of Hakka culture.

5. Conclusion

Emotional design has opened up rich and diverse paths for the Hakka Museum to improve the user experience. By deeply mining and applying Hakka cultural elements from the three levels of the visceral level, the behavioral level, and the reflective level, and skillfully integrating them into various aspects such as exhibit display, spatial atmosphere creation, and storyline construction, it can effectively stimulate users' emotional resonances with Hakka culture and significantly enhance the cultural dissemination efficiency of the museum.

Looking to the future, the Hakka Museum should continuously pay close attention to the dynamic changes in user needs, keep up with the pace of the times, and constantly explore innovative application models of emotional design. On the one hand, strengthen in-depth cooperation with the scientific and technological field, make full use of emerging technologies such as artificial intelligence and big data to further optimize the user experience and achieve personalized services. For example, through artificial intelligence algorithms, accurately recommend exhibits and explanations that users are interested in according to their visit history and preferences. On the other hand, actively carry out cross-cultural exchanges and cooperation, compare and display Hakka culture with other regional cultures, broaden users' cultural horizons, and enhance the international influence of Hakka culture.

In short, only by continuous innovation and progress can the Hakka Museum bring a more high-quality, unique, and unforgettable cultural experience to users, better shoulder the important mission of inheriting and promoting Hakka culture in the new era, and contribute to the prosperity and development of culture.

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