

Research on the Design of Changting Red Culture Apps Based on Emotional Design

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ABSTRACT

This paper aims to explore the application methods of emotional theory in red culture apps, in order to optimize the dissemination channels of Changting red culture and assist in the inheritance and promotion of red culture. The literature analysis method is adopted to analyze and sort out the current status of red culture dissemination in Changting, the design shortcomings of the red culture apps, and the emotional design hierarchy theory. Methods such as data induction are utilized to deeply explore user needs and summarize emotional design strategies for the Changting red culture apps. Taking Changting, Fujian as the research object from the perspective of user experience and user needs, this paper systematically grasps the emotional design of red culture apps using Norman's three-level design theory, with the purpose of constructing red culture dissemination mobile apps that integrate sensory experience, user experience, and emotional experience. The study elucidates how to combine emotional design theory to improve user experience satisfaction, promote the progress and improvement of red culture app design, and provide new ideas for the effective inheritance and promotion of red culture in the new era.

Keywords: Emotional design, Mobile apps, Changting, Red culture.

1. INTRODUCTION

With the rapid development of mobile technology, the use of mobile apps has penetrated into various fields of people's work and life, gradually changing their work and life habits. The development of mobile apps has also provided new development opportunities for traditional industries. Red culture, as a precious cultural resource in China, needs further development and dissemination. Utilizing mobile technology to create media for the dissemination of red culture has become a new development trend. As an innovative area for the inheritance of Chinese red culture, although Changting, Fujian is rich in cultural resources, it lacks corresponding cultural resource integration and dissemination. With the help of mobile technology and development design, a new carrier of dissemination that combines local red culture characteristics and humanistic care can be created - Changting red culture apps, expanding the dissemination volume of Changting red culture. Therefore, this paper conducts in-depth research on the red culture in the Changting area. Based on the

emotional needs of users, the Changting red culture apps are taken as the research object, and design principles are established from the three-level theory of emotional design. The emotional design theory is integrated into the design of the Changting red culture apps to explore the emotional design application of them and help promote the dissemination of Changting red culture.

2. THE PROBLEMS AND COUNTERMEASURES IN THE DISSEMINATION AND DEVELOPMENT OF CHANGTING RED CULTURE

2.1 *The Dissemination Methods of Changting Red Culture That Need Improvement*

Chinese red culture has its unique historical, cultural, and artistic value, and is an important spiritual source for China's socialist construction. Red culture has undergone a long period of industrial development in the market and its

influence has gradually expanded. Changting, Fujian is not only a famous historical and cultural city, but also an important birthplace of red culture. As the starting point of the Red Army's Long March, it is known as the "Hometown of the Red Army" and the "Little Red Shanghai".[1] At present, Changting has been listed as one of the 12 key red areas in China, the red revolution site group there has been announced by the State Council as one of the 30 red boutique routes in the country, and 7 scenic spots, including the former Soviet Site in Fujian Province, have been listed as 100 classic scenic spots in the country.[2]

Although Changting has abundant red cultural resources, it lacks systematic and creative resource development and management. For example, there are still many red historical and cultural resources in Changting that have not been excavated and many revolutionary sites with commemorative and educational significance are rarely known. These are irreplaceable textbooks for educating young people to carry forward revolutionary traditions, and are also valuable resources for carrying out red culture education. Therefore, how to better grasp the integration and development of red culture and local resources is a systematic, long-term, and complex project. In this context, integrating Changting resources and choosing effective ways to spread red culture has become an urgent problem to be solved.

2.2 The Demand for High-quality Dissemination of Changting Red Culture Through New Media Channels

In the past, the red culture of Changting was limited by insufficient resource development, and its dissemination and development progress was slow. The promotion of local red culture has always adopted a traditional, closed, and static approach, lacking flexibility and unique characteristics. The dissemination of cultural information lags behind, lacking a sense of participation and experience. But with the development of digital dissemination methods, mobile phones have gradually become an important carrier of dissemination. Through mobile apps, users can browse cultural content anytime and anywhere, no longer limited by time and geographical location, making the dissemination of Changting red culture more widespread and flexible. Under this development trend, using mobile apps to promote Changting red culture can present scattered Changting resources in a more three-dimensional and vivid way. Through the

construction of mobile platforms such as official accounts, apps and applets, the revolutionary history museum can be endowed with cultural value, the service quality of the revolutionary history museum can be improved, and users can use fragmented time to build knowledge maps, integrate comprehensive resources, and promote the spread of red culture, so that the young generation can better understand the red spirit of the old revolutionary base area in western Fujian and feel the unique Hakka customs of Changting ancient city.

2.3 Red Culture Dissemination That Meets the Emotional Needs of the Public

With the development of human society and the continuous advancement of cultural research, the connotation and extension of culture are constantly evolving. Culture has integrated into people's daily lives, social interactions, production, and consumption in all aspects. Therefore, people's attention to culture is not limited to the conceptual level of rationality. In the digital era, cultural dissemination first touches the emotional level of the audience and users before the information is digested and raised to the cognitive level of understanding and acceptance due to a variety of information and high-speed dissemination. Emotional factors play an increasingly important role in the process of dissemination. Placing user needs at the core of design and paying attention to their emotional needs is essential to truly resonate with their emotions.

Mobile apps, as the most convenient medium for spreading red culture, have become an important way for users to understand red culture. Users can easily understand red stories and feel the revolutionary spirit crossing time and geographical limitations. Through personalized interactive methods and entertaining display forms, users can enjoy spiritual pleasure, generate emotional resonance, and be more willing to deeply understand red culture. Therefore, it is particularly necessary to design a red culture app based on digital media technology, starting from the emotional needs of users.

3. CURRENT DESIGN STATUS OF RED CULTURE APPS

Through data research and sorting, it is found that the design of red culture related apps in the market is still in its early stage. The existing apps

with red culture as the theme are mainly divided into 4 categories: cultural experience, red education, red tourism, and ideological and political education. Although the design of related apps has different functional focuses, the functions are relatively single and there are still certain problems.

3.1 Uneven Design Level and Difficult to Meet User Needs

Some red culture apps have varying levels of design in terms of form and function, with problems such as insufficient content information, incomplete information, and slow content updates. The red cultural resources are relatively scattered and mostly in the form of dots, and the degree of resource integration needs to be improved at present. The existing apps only provide a simple list of information, making it difficult to help users more systematically understand the information content and rich spiritual connotations related to red culture according to the usage needs of different groups of people.

3.2 Homogeneous Design Issues, Making It Difficult to Generate Emotional Connections

Some red culture apps have insufficient features and lack core functions, leading to serious market homogenization issues. Most of these apps belong to the long tail design, with a single form of content display, which can easily cause fatigue for users. User stickiness is low and the loyalty is low, making it difficult to establish a deep emotional connection with the product, lacking red emotional resonance and strong cultural identity.

3.3 Lack of Interactive Communication in Design, Making It Difficult to Stimulate Emotional Fluctuations

Some red culture apps lack interaction and communication with users, resulting in low user experience satisfaction. Blindly pursuing functionality and technicality makes the product dull, uninteresting, lacking infectivity and immersive experience, making it difficult to stimulate users' red emotional fluctuations, unable to demonstrate the expected infectivity and motivating effect.

4. EMOTIONAL DESIGN TRENDS OF RED CULTURE APPS

"Emotional design" was proposed by Donald A. Norman. In related concepts, he divides emotional design and goals into three levels: instinct, behavior, and reflection,[3] which are reflected in the three emotional experiences people have towards things in life. Through in-depth research, using it as one of the theoretical basis for user experience design can promote the improvement of product utilization. The instinct level is the initial sensory sensation that the product conveys to users, which can be leveraged through the design of the product's appearance. The behavior level mainly emphasizes utility and focuses on the entire user experience of using the product.[4] The reflection level is based on emotional reflection and resonance, mainly reflected in the unique connotation of the product.

With the continuous development of the Internet, ordinary and commonly used mobile products are no longer able to meet the needs of current users. Product design is no longer limited to the visual collection of various functions, but more attention is paid to whether the product can meet the emotional and spiritual needs of the heart.[5] Therefore, the design of the red culture apps needs to cater to contemporary design trends, incorporate emotional design, focus on users, meet their emotional experience needs, and achieve a wider dissemination effect.

5. EMOTIONAL DESIGN STRATEGIES FOR CHANGTING RED CULTURE APPS

The three levels of emotional design system, each with its own characteristics, are also interrelated and show a progressive relationship level by level. In the design of the Changing red culture apps, it can be built from three parts according to the level of user needs and the three-level theory of emotional design, and then clear the design framework of apps, providing a theoretical basis for design practice.

5.1 Emotional Design at the Instinct Level

The main physical features of instinct level design are sensory stimuli such as visual, auditory, and tactile senses. Based on this, attractive visual and sensory experiences are particularly important in product design, that is, the visual expression

conforms to the public's cognition and the fusion of multiple senses touches the public's perception.

5.1.1 Creating a Themed and Atmospheric Interface Environment to Enhance Product Differentiation

The visual presentation of the Changing red culture apps requires an engaging visual style to attract young users and create a strong thematic atmosphere, in order to better spread and promote red culture. Therefore, the visual theme style of the apps should be consistent with the aesthetic taste of young users, combined with the theme and spiritual connotation of red culture, and adopt the color of red. As a symbol of revolutionary history, red can intuitively convey cultural images to users. In the process of using the apps, red can naturally trigger users' associations and emotional experiences with cultural red, thereby stimulating emotional resonance among young users.

In terms of font and graphic design, simplicity and clarity should be maintained to avoid excessive complexity. Besides, the interface elements of the Changing red culture apps should be representative, highlighting local characteristics, condensing the expression symbols of theme emotions into the interface, and achieving the effect of integrating emotions into the apps.[6] In the design process, a standardized information architecture and layout form should be adopted to ensure that users can timely and accurately obtain information on the interface. This not only enhances the user's cultural perception ability, but also enlarges the product differentiation between the apps and other applications. Finally, it is necessary to simplify the number of interface elements and avoid unnecessary information structures, which can ensure that users can easily obtain the required information while maintaining the simplicity and usability of the interface.

5.1.2 Mobilizing Visual and Auditory Perception to Form a Diverse Immersive Experience

When users come into contact with things, the first thing they perceive and react to is their body, including vision, hearing, touch, smell, and taste, which constitute the comprehensive sensation of the body. Therefore, in the design of the Changing red culture apps, in addition to emphasizing visual experience, touch and auditory perception can also be mobilized. For example, digital means such as

simple voice explanations and vivid image interpretations can be used, combined with interesting interactive pages, to create an immersive revolutionary historical scene experience in specific plots, making the originally profound and ancient red culture easier to understand and accept, thereby awakening emotional resonance among users, and generating patriotism.

5.2 Emotional Design at the Behavior Level

The design at the behavior level focuses on the interaction between users and products, emphasizing the utility, functionality, and usability of the product. This requires a user-centered design approach that considers product functionality, information comprehensibility, and process simplicity. But practical functionality alone is not enough, excellent design must consider "experience". A product with a good user experience can generate positive emotions such as satisfaction, pride, and a sense of control.[7]

5.2.1 Creating User-centered Functional Modules to Achieve Systematicity

Emotional product design emphasizes systematicity. Due to the increasing comprehensiveness and perfection of product functions in future social development, even small products may have various different functions. Therefore, modular and intelligent design has become crucial. In other words, designers should design products from a holistic perspective, using scientific combinations to provide users with a good user experience and emotional interaction during use, meeting the different emotional experiences of different users, further enhancing the rationality of product design, and better creating conditions for personalized services.[8]

The functional design of an app mainly includes the construction process and experience content. Designers need to understand the diverse needs of different user groups, which helps determine the positioning of app functions, provide personalized experiences, improve user satisfaction, and thus improve the quality and attractiveness of apps. Through conducting research and sorting, it is found that the target audience is mainly divided into "knowledge-based" and "exploration-based" groups. The "knowledge-based" group prefers to browse information and learn cultural knowledge, such as understanding the Changing red sites,

paying attention to revolutionary history, and exploring the stories behind it. The "exploration-based" group pays attention to the experience process of exploring culture, such as visiting red scenic spots and understanding the local cultural landscape. This requires the functional design to meet a comprehensive user demand orientation, and the apps should include functional sections such as cultural resource display and cultural exploration experience. When users use apps, they can easily and quickly find the content they want to search for, which will generate a more enjoyable emotional experience and increase the probability of users reusing them.

5.2.2 Improving Interaction Details and Strengthening Humanized Care

The interaction design details of apps create an atmosphere for users to try the apps, which helps to enhance the emotional dissemination effect of the apps.[7] In the design of the Changing red culture apps, achieving an accessible user experience is crucial. Users usually interact frequently with the interface when using apps. If the basic functions of the apps react slowly, it may exhaust the user's patience, lead to negative emotions, and ultimately reduce satisfaction with the apps, even causing the user to stop using them.

Simplifying the operation process is an important influencing factor in optimizing user experience, mainly considering two aspects: optimizing interaction methods and reducing interface switching. Firstly, adopting familiar and common interaction methods is the key to reducing user learning costs. This means that familiar interface elements and operating methods should be used in the design to enable users to quickly get started and reduce the learning curve. In addition, interaction design should be natural and smooth, in line with user habits, ensuring efficient access to information while reducing unnecessary clicks and operations. What's more, interface switching should be minimized as much as possible to avoid unnecessary jumps, allowing users to obtain the required information and functions within one interface, as excessive interface switching can easily cause confusion for users and reduce product satisfaction. Moreover, designers can consider adding fun dynamic designs to alleviate the user's anxiety of waiting when switching interfaces. Finally, the apps should provide timely and effective feedback to reduce the likelihood of user errors and improve the user experience and

efficiency. In terms of detail perception, it should take into account the emotional needs of users and increase their stickiness to the use of the product.

5.3 Emotional Design at the Reflection Level

When users use a product, rational thinking often leads them to make an evaluation of the product. This level of design requires consideration of the meaning of the product, the influence of ideas, the sharing of experiences, and the influence of culture, often changing based on different aspects such as user culture, education, and personal experience.

5.3.1 Well Telling Red Stories and Shaping Red Emotions

It is crucial to delve deeper into the expression of red stories. Designers can use multimedia methods such as illustrations, videos, audio, etc. to present red stories in a vivid and interesting way, attract user attention, and stimulate red emotions. This innovative expression not only provides a deeper experience of red culture, but also provides users with more opportunities to participate. In the Changing red culture apps, designers can use illustrations to visualize red stories, which not only makes it easier for users to understand and remember, but also creates an impression of emotional dissemination, thus better inheriting red culture.

5.3.2 Designing Incentive Mechanisms to Enhance Personal Satisfaction

The emotional incentive mechanism is the key to improving user satisfaction and promoting active user participation. Personalized design can stimulate positive behavior based on user needs. For example, through the red check-in function, users can create exclusive red footprints, which become emotional memory points and encourage frequent use of the apps. In addition, the personal points and achievement medal system can display the achievements of users, encourage them to learn and participate more, and improve satisfaction and loyalty. This incentive mechanism can enhance users' dependence and participation in the apps.

5.3.3 Integrating Red Resources and Building Red Cultural Brands

Integrating representative red resources from the old revolutionary base area in western Fujian and organically integrating them into the design of the apps can help strengthen users' memory of red culture. By extracting the characteristics of the Changting Red Army Bridge and the Guanshou Temple and integrating them into the design, it not only highlights the uniqueness of the Changting red culture apps, but also promotes the dissemination of red resources. These red elements are not only visually appealing, but also symbols of brand characteristics, helping to establish the Changting red culture app's position in the minds of users. By integrating these elements, designers can establish brand characteristics among users and promote red culture.

6. CONCLUSION

User experience is one of the important criteria for whether an app can have long-lasting vitality and the important factor affecting user satisfaction is whether there is emotional integration in the design.[9] The existing red culture apps lack emotional design, resulting in products being dull, uninteresting, and increasingly homogenized. Therefore, this paper applies emotional design theory to the design of Changting red culture app. The user experience in apps is usually manifested in three stages: understanding, using, and identifying. From the instinct level design, i.e., using sensory cognition to awaken cultural emotions, to the behavior level design, i.e., focusing on utility needs to reduce cognitive burden, and then to the reflection level design, i.e., satisfying personalized needs to stimulate deep emotional experiences, this paper systematically constructs a method system for emotional design of red cultural apps. The purpose is to enhance the practicality, interactivity, and fun of the red culture app, enhance user emotional resonance, and effectively establish an emotional connection between the public and red culture. Taking Changting as an example, it helps to inherit and protect red culture resources and attempts to provide new ideas for the dissemination and development of red culture.

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