Innovation research of Application interaction design based on regional characteristics

Tong Zheng 1,a*, Xinshuo Feng 2,b
1School of Humanities and Arts, Shenyang University of Chemical Technology, Tiexi, Shenyang, China
2School of Chemistry and Engineering, Shenyang University of Chemical Technology, Tiexi, Shenyang, China

Abstract. With the development of mobile Internet in China and the popularity of mobile phones and various mobile devices, the demand for APP interaction design is becoming more and more common. China's APP interface design industry started late, and a large number of international and standardized design styles have occupied the APP application market. Chinese traditional culture is extensive and profound, with rich cultural connotation and historical deposits. How to apply traditional cultural elements to APP interactive interface design and how to display traditional culture through APP interaction are the topics we want to study. We should give traditional Chinese culture vitality in the new era, and integrate it into the interactive interface of modern apps, so that traditional Chinese culture can be more widely inherited and carried forward.

1 The development status of traditional regional characteristic Application

1.1 Research status at home and abroad

1.1.1 Foreign research status

In 1959, American scholar B. Schackel proposed the concept of similar interaction design for the first time in his document "Ergonomics on Computer Console Design". With the first International Conference on Human-machine Systems held in 1969, the development of interaction design has attracted more and more attention. In the 1980s, Moglidge formally introduced the concept of interaction design. Subsequently, the application of interaction design was promoted.

1.1.2 Domestic research status

The innovation and research of APP design in China started relatively late, but in the early days, well-known design companies and IT companies have also established relevant interaction design institutions. In recent years, the development of China's mobile interactive industry and the wide application of smart household appliances such as mobile phones and computers have also made certain progress and development, and some innovative workshops and design agencies such as Rococo have been established in Guangdong, Beijing and Shanghai.

At present, some of the interactive design works in China are copied from foreign countries, and the relevant APP design works are exactly the same. There are even fewer works designed with traditional Chinese elements. In 2010, Guangdong Industrial Design Association also led the establishment of the Interaction Design Committee, and vigorously promoted the rapid development of the interaction design industry. Embedding traditional Chinese elements in modern works is one of the important issues that we should pay attention to. Through the use of traditional Chinese elements of visual design to excavate the system for analysis, research how to vigorously promote traditional culture in the field of APP interaction design. At the same time, it can also put forward new design methods and concepts, so as to arouse the public's attention and love for traditional Chinese culture[1].

2 Theoretical research and practical value of traditional regional characteristic Application

Since mankind entered the era of science and technology, mobile Internet technology has developed rapidly, intelligent mobile devices have become the most important part of people's lives, and more and more interactive APP applications have made everyone's life more colorful. At the same time, it also combines VR, AR and other new technologies and arts to bring users experience. However, with the emergence of more and more "phubbing", the already scarce traditional culture has also been greatly impacted. Therefore, traditional culture and local characteristics of Liaoning application APP will inject fresh vitality into Chinese traditional culture, and finally slowly enter people's lives with a new look. It's a priority[2].

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With innovative ways to vigorously promote the traditional culture and Liaoning characteristics and absorb the nutrition of culture, give the traditional culture a new era connotation, while exploring new values[3]. It is of great theoretical and practical significance to the innovation reform and practical application of local traditional culture. Filling videos, images and corresponding texts in the APP of traditional culture and Liaoning local characteristics to show the local characteristics of Liaoning, and finally adding elements of traditional culture into the interaction design for practice, which is not only an inheritance of ancient culture, but also an innovative value for modern media design. In this way, people can have a comprehensive understanding of Liaoning at any time. In addition, due to the regional characteristics of snacks and tourist attractions in Liaoning, more tourists will be attracted to Liaoning, which will better drive the economic development, and it also has good practical value for people in other cities to understand the regional culture of Liaoning[4].

3 The overall framework and main contents of the study

Integrating traditional cultural elements into the interactive design APP can not only reflect the characteristics of Liaoning brand, but also show the careful design for details from the side[5]. For example, the introduction of Liaoning related apps in the application icon design to add Chinese elements, the use of traditional Musical Instruments in the dynamic effect design and other ways, to present a rich and interesting interactive experience for users. At the same time, it is conducive to our inheritance and development of Liaoning regional characteristics of traditional culture.

![Fig. 1. The overall research framework of traditional regional culture APP](image)

Main content(Fig. 1): The main content of this paper takes the traditional culture with local characteristics of Liaoning as the starting point, and discusses how to integrate local characteristics into the design of tourism APP to improve the interactive experience of users and meet the emotional needs of the public. First, based on the concept of interaction design and traditional culture, the relevant factors affecting traditional culture are analyzed. Explore how these factors can be incorporated into the design of the APP interface to inspire positive emotions among users and spread the local characteristics of Liaoning. Secondly, the content and innovative design of some excellent local characteristic apps at home and abroad are analyzed, and relevant interactive and visual elements are summarized. Finally, the traditional cultural design is reflected in the interface design of local characteristic apps. Relying on local tourism resources with rich regional characteristics and other related resources, the local characteristic elements of Liaoning are explored through field investigation. Incorporate it into your emotions. Finally completed the traditional APP interface design practice with the theme of Liaoning regional tourism[5].

Traditional culture has accumulated thousands of years of civilization and profound. It provides valuable resources for interactive APP design with local characteristics. Due to the diversity of Chinese nationalities and cultural symbols with a variety of ethnic and regional characteristics. APP interaction design is a product of the new era, which not only brings convenience to human life, but also pays more attention to emotional communication between people[6]. Integrating traditional culture is an emotional sustenance of people. Therefore, integrating traditional culture into APP interaction design with Liaoning characteristics will arouse the resonance of Liaoning people. At the same time, the process of continuous integration of traditional culture into the new society is also the inheritance and development of history[7]. Due to the application of APP interaction design on the Internet, they can be widely disseminated through the Internet in the form of new media. In this way, combining traditional culture and local characteristics of Liaoning with mobile phone APP in the way of "Internet +APP", designing a unique Liaoning culture APP can not only effectively help traditional culture out of the dilemma, let more people understand, learn and inherit, but also drive the economic development of Liaoning[8].

4 Basic ideas and research methods

4.1 Research idea

The research of this topic is promoted from theory to practice. First of all, with the help of literature review, I learned about the achievements of interaction design of traditional culture and local characteristics of APP in and outside the province. Based on this, I sorted out existing research ideas and experiences, further enriched the "Internet +APP" approach, and how to combine traditional culture and local characteristics of Liaoning with mobile phone APP, which would serve as a practical theoretical basis for subsequent work. Secondly, from the perspective of the regional characteristics of Liaoning, focus on the relationship between the characteristics of Liaoning and APP interaction design, form the main innovative methods, and with the help of practical feasibility, finally form the research report and paper.
4.2 Research method

4.2.1 Literature research method
Search literature, learn theoretical literacy, improve research ability.

4.2.2 Survey and observation method
Through the questionnaire survey method to find problems, put forward problems, solve problems.

4.2.3 Experimental research method
In the course of practice, modify and perfect to practice, and serve the community aesthetic education.

4.2.4 Case analysis
The law of aesthetic education curriculum is put forward through case study using tracking method, observation method and result analysis method.

4.2.5 Experience summary method
Refine practical courses, rise to a theoretical level, and form papers and research reports and other results.

5 Main features and innovations

5.1 Key and difficult points to be broken through
In today's Internet era, there are many designers all over the country and even the world to create corresponding professional APP interactive products for the characteristics of traditional Chinese culture and local economy, which is the focus and difficulty of this topic to analyze the current situation of tourism and cuisine in Liaoning.

5.2 Main feature
The application will be combined with the regional characteristics of Liaoning and traditional Chinese culture, through videos, images and corresponding text descriptions in the display, so that the public can understand the characteristics of Liaoning culture while systematically learning traditional culture. In addition, interactive APP applications are highly flexible. An interactive APP dedicated to promoting the local characteristics of Liaoning's traditional culture can also bring great convenience to most people who want to learn but have no opportunity to receive education. Simple and flexible can achieve the best results at the lowest cost. More people interact with mobile apps using apps than any existing audience. This is also more conducive to the dissemination and promotion of Liaoning's traditional local characteristics. Our team will also use weekends to collect resources and analyze data[9].

5.3 The innovation of this topic
In today's Internet era, there are many designers all over the country and even the world to create corresponding professional APP interactive products for the characteristics of traditional Chinese culture and local economy, which is the focus and difficulty of this topic to analyze the current situation of tourism and cuisine in Liaoning.

5.3.1 Application method
This topic mainly starts with traditional culture, and through a large number of theoretical research and practical experience, sorts out the elements of traditional culture design, and finally summarizes the application methods of traditional culture in local tourism APP interface design.

5.3.2 Design ideas
Explore the application of traditional culture in local tourism APP, and provide theoretical guidance and explore new design ideas for the design of relevant local or urban tourism APP.

5.3.3 Traditional cultural information translation in interaction design
Traditional cultural information is different from people's thinking and living habits, so it is necessary to choose appropriate information sources to translate traditional cultural information by interaction design. Many traditional Chinese cultures are gradually disappearing from people's consciousness. It is necessary to transform it into the visual information familiar to the public in modern life, so as to facilitate their understanding and dissemination. Extract the corresponding core elements in the APP interactive interface, pursue the effect of cultural information dissemination on the premise of ensuring the usability of the interface, and translate through colors, graphics and text.

5.3.4 Liaoning local characteristics tourism APP design positioning innovation
The interactive design goal of Liaoning regional features APP is an important symbol to show local characteristics and the specialization of information services. The design and development of the APP reflect the characteristic elements and local customs of Liaoning, and at the same time meet the needs of foreign tourists to understand some local customs when using interactive APP products. For tourist cities, a convenient and practical travel app is a good promotional card. When developing Liaoning tourism app with local characteristics, it is necessary to analyze the culture of
each place. In this case, Shenyang City is taken as an example to summarize and extract the visual elements with regional culture and determine the design orientation of the tourism app page. Research on the market environment of tourism application development in Shenyang city, meet the requirements of practical functions, and enrich the design ideas of local characteristics tourism application in Shenyang City[10].

5.3.5 Local tourism APP into the traditional culture of visual innovation design

Regional tourism apps should pay attention to the continuity and consistency of visual design, and the most important thing is to pay attention to personalized visual principles(Fig. 2). In APP interface design, from text design to color design to icon design and layout design, some principles of "flatness" should be considered. The corresponding design of text plays a crucial role in the interface design of APP applications. Text design in mobile applications should focus on striking and concise, and use simple and easily recognizable fonts to promote, which will integrate the ink effect of traditional culture; In color design, we should actively extract colors with local characteristics, and extract colors from landscape photos of the city's scenic spots[11].

Fig. 2. Baicao Wen Chinese Medicine APP interface design - case

5.3.6 The framework and interaction design innovation of Liaoning local tourism APP

The design of Liaoning featured APP uses AI and big data computing functions to predict users' inner activities and plans through user behavior, such as: When tourists use the interactive APP, the mobile phone camera can automatically track the user's sight, so as to recommend suitable travel plans and different suggestions. The interactive design of the APP brings a new development model for the local tourism characteristics of Liaoning.

References


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