



Research on the Design of Cultural and Creative Products from the Perspective of Tianjin Intangible Cultural Heritage

Take graduation design works as an example

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Abstract. With Tianjin folk art intangible cultural heritage Yang Liuqing New Year paintings, Clay Figure Zhang and Kite Wei as the research background, 24 graduation design works of Tianjin University of Technology are taken as the case study. To explore the elements of the integrated design method of intangible cultural heritage and cultural and creative product design. The mulberry map of 24 cultural and creative product design works was constructed through focus group discussion to realize visual cluster analysis. Form the design elements of "Intangible Cultural Heritage + Cultural and Creative Products", and carry out the dimensional analysis. It provides reference significance for the design teaching, research and practice of "Intangible Cultural Heritage + Cultural and Creative Products".

Keywords: Tianjin Intangible Cultural Heritage; Clustering analysis; Cultural and creative product design; A case study; Graduation design

1 Introduction

With the development of The Times and the popularization of AI, artificial intelligence and 5G network, the inheritance and protection of intangible cultural heritage are also facing new challenges and opportunities. The intangible cultural heritage of Tianjin is enduring, with typical northern characteristics and delicate style of Jiangxi. [1] According to the cultural characteristics of Tianjin intangible cultural heritage, combined with the professional characteristics of product design, the social service value of design education of "cultural confidence and rural revitalization" is realized. In the 4 undergraduate graduation design topics of Product design major of Tianjin University of Technology from 2019 to 2022, 24 works of Tianjin folk art intangible cultural heritage Yang Liuqing New Year pictures, Clay Figure Zhang and Kite Wei were selected as the research objects. The visual cluster analysis of "Intangible Cul-

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tural Heritage + Cultural and Creative Products" was formed, and the key design factors of "Intangible Cultural Heritage + Cultural and Creative Products" were extracted to form the design dimension.

1.1 Tianjin Intangible Cultural Heritage

Under the social background of vigorously promoting the protection and inheritance of intangible cultural heritage, how to protect and pass on the folk art skills and techniques, how to build "cultural confidence", build intangible cultural heritage industry, so that non-inheritants can find a sense of belonging, so that the general public can "see people, see things, see life". Through the Yang Liuqing New Year picture, Clay Figure Zhang, kite Wei three Tianjin folk art intangible cultural heritage, applied in the design of cultural and creative products.

Yangliuqing New Year pictures.

Tianjin Yangliuqing New Year pictures, as a typical representative of regional folk arts and crafts, not only has the symbolic language of art, but also has the attributes of traditional festival folk culture. Its art forms, such as craft, technique and subject matter, reflect the Grand Canal Caotransport culture [2]. The New Year pictures have absorbed the long strokes of Jiangnan paintings and combined with the themes of traditional northern art, forming a unique charm combining the characteristics of folk art in the North and South [3]. Through Tianjin Yangliuqing New Year Painting Museum, folk culture Museum and inheritors, a systematic inheritance and promotion of the status quo has been formed.

Kite Wei.

Wei kite is famous for its five characteristics of "various shapes, realistic painting, stable flight, exquisite skills and convenient carrying". The craft combines the hole dowel of carpentry, the copper hoop connecting technique of tin welder and the folk painting technique of Tianjin and is applied to kite making. Formed a very distinctive folding placement, removable assembly, easy to carry kite skills. [4]

Clay Figure Zhang.

Tianjin Clay Figure Zhang began in the reign of Daoguang of the Qing Dynasty. Its founder, Mr. Zhang Mingshan, skillfully integrated folk clay figurine with Western sculpture skills. Selected mythological stories, historical figures, folk legends and other themes, with fine production, exquisite techniques known. Nowadays, it is passed on and promoted through the clay figurine Zhang Family, Tianjin Clay Figure Zhang Color Sculpture Studio and other organizations. [5]

1.2 Cultural and Creative Product Design

The core of cultural creative product design is "culture" and "creativity", these two words have similarities and differences, cultural creative product is a kind of cultural products. The innovation of cultural and creative products is firstly based on the selection and translation of culture. As a typical kind of cultural heritage, intangible culture itself has richness that other cultural heritages do not have. With the continuous development of economic globalization, the globalization of culture creativity also on at a rapid pace, in urgent need of Chinese traditional culture and the cultural creativity tendency in the same direction, through the way of cultural creativity from the perspective of market and industry, break through the traditional conservative way of development, improve the economic benefits of traditional cultural products and market competitiveness. Therefore, the integration of intangible cultural heritage and cultural creation has become an inevitable trend of future development. [6] [7] [8]

2 METHODS

The addition of cultural and creative design to ICH can inherit and innovate the spiritual connotation and cultural uniqueness behind ICH, as well as bring about business model transformation and user experience upgrade at the product level. As the pillar of the social economy, the consumption preferences of young people can be translated into accurate cultural and creative design paths. Therefore, in order to obtain the cultural consumption preferences of young people, the students of Tianjin University of Technology were used as the research subjects. The students' works were categorized and analyzed to obtain the overall conceptual preferences of the students for cultural and creative design.

2.1 Case of Tianjin non-intangible Cultural Heritage Cultural and Creative Product Design

The works of cultural and creative design related to the above themes were selected from the four undergraduate graduation design selections of Tianjin University of Technology in product design from 2019-2022. After the focus group discussion, 24 representative products were finally selected (see Figure 1). Make cards with pictures with captions showing product features. Figure 2 is an example of these cards. And the bias values were scored by experts according to 7 conceptual categories, with 0~100 as the range of conceptual variables, with 0 representing very non-conforming and 100 representing very conforming. The final bias value of the work was obtained by calculating the bias value scored by 8 experts for each work. The figure 3 below details the bias value of each work.



Fig. 1. Cultural and Creative Product Design Case



By combining DIY jewelry and kites, users can feel the beauty of traditional culture and experience the joy of doing things by themselves. This experience box is more suitable for female friends like curtilage at home, the whole design is simple, clear line is fluent, simplifies the traditional kite line but retain the traditional kite symbols, there is no lack of fashion sense of design to make producers have more can match the outfit, make the products more added the practicability of worn out.

Fig. 2. The Card of Sample

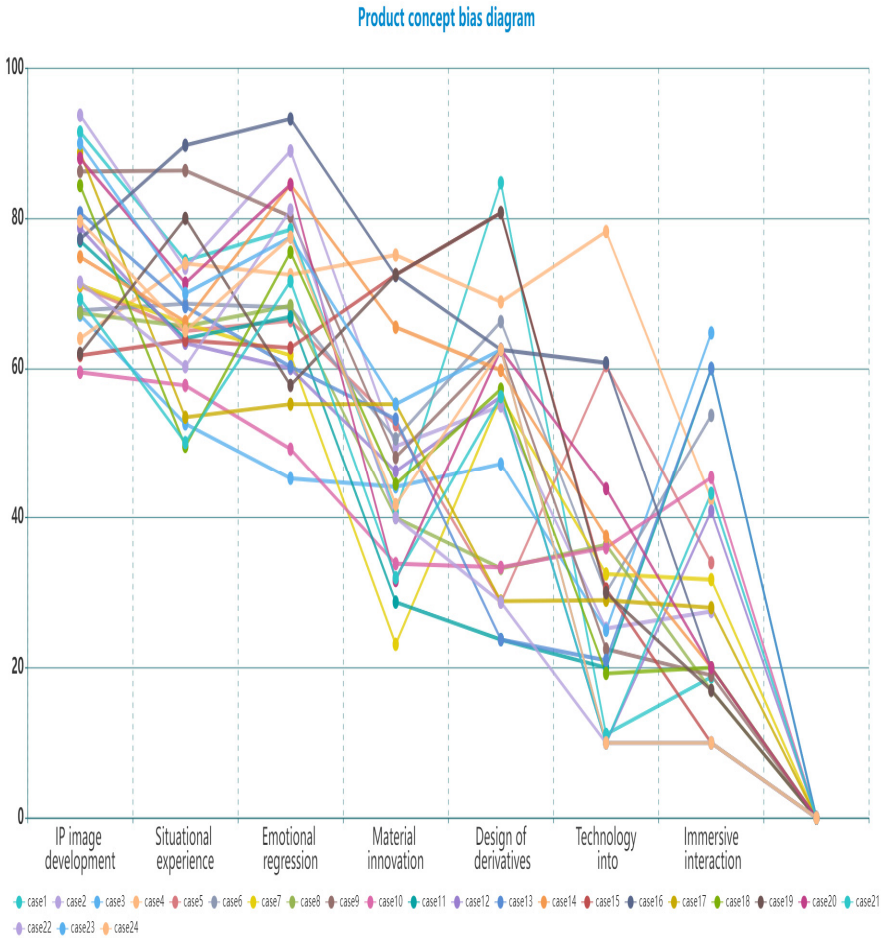


Fig. 3. Product Concept Bias Diagram

2.2 Visual Cluster analysis of "Intangible Cultural Heritage + Cultural and Creative Products"

Using Mulberry diagram analysis to categorize the concepts of 24 works with bias scores, the final concept percentages presented by the 7 categories were obtained. It is obvious from the percentage of concept sizes in the figure below that they are IP image, emotional return, immersive experience, derivative design, material innovation, service innovation, and technology implantation in descending order. (As shown in Figure 4.)

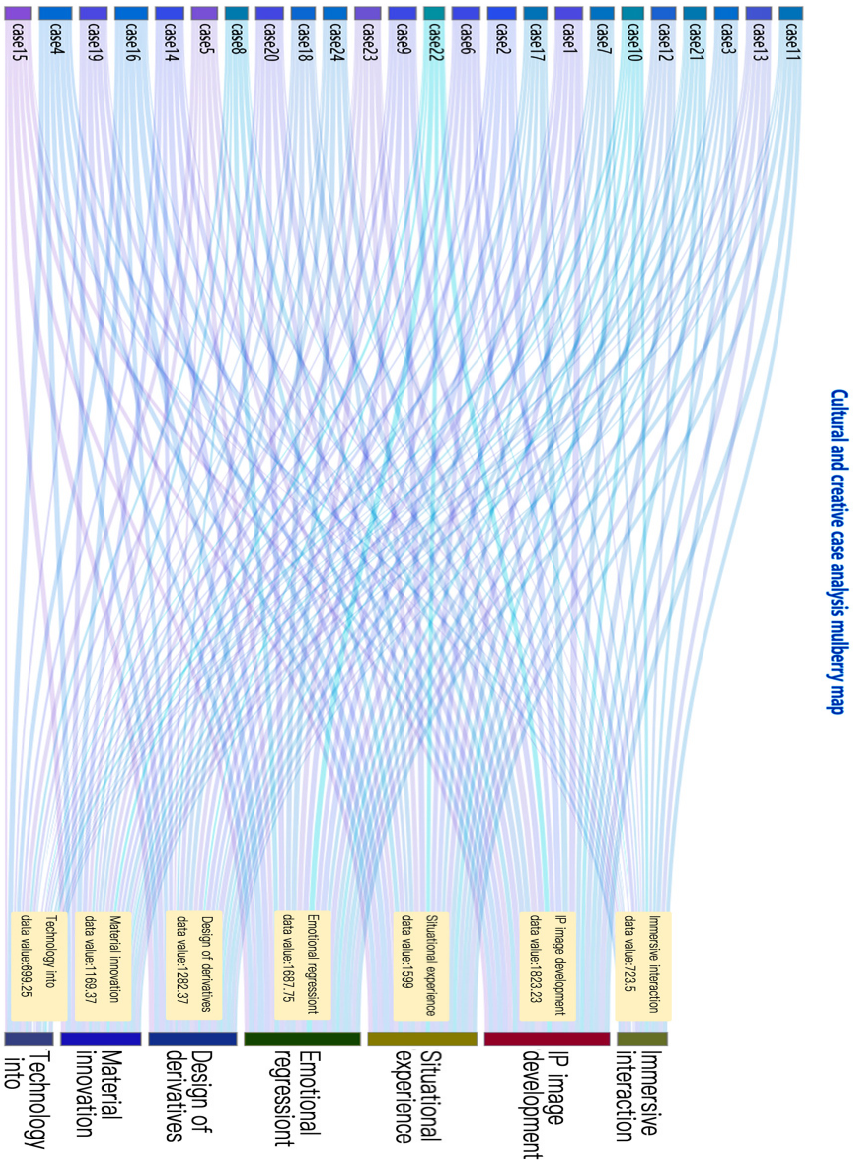


Fig. 4. Mulberry Diagram of Cultural and Creative Case Analysis

3 Results & Discussion

The visual clustering analysis shows that students have a high preference for IP image, emotional return and immersive experience in creative design, but less for technological implantation and service innovation. At the same time, from the past design

cases and the cluster analysis, the medium level of material innovation and derivative design have shown an enduring state, which indicates that this type of creative design direction has been popular among young students. Therefore, the future direction of cultural and creative design should be explored more from IP image, emotional return and immersion experience, while material innovation and derivative products should be explored more. For technology implantation and service interaction, it is necessary to involve other disciplines to interpolate knowledge and break away from disciplinary boundaries. In this study, we can realize the integration of concepts and concepts through the concept interpolation approach of cultural and creative design, and achieve the perfection of the concept bias of the product. The final analysis and combination of the three cross-cultural design directions of visual form cultural communication, immersive experience and technological innovation. In the following, we will elaborate on the relevant representative products for the three design directions.

3.1 Visual Cultural Transmission: IP Implantation, Derivative Design

It has great advantages to design cultural and creative products based on the immateriality and nationality of intangible cultural heritage. As for the design of cultural and creative products, the corresponding immaterial cultural themes are firstly refined with symbolic elements. The key of symbol extraction lies in the summary and derivation of cultural implication. According to the article of intangible rich cultural connotation, and refined design embedded IP image, symbols, show to promote intangible cultural transmission in visual form, the breakthrough tradition conservative way of development, through the modern design language and expressing method to restore or reconstruct image of non-material cultural heritage, using the modern design feeling and expression, On the basis of traditional aesthetic and emotional concepts, the form-based design innovation is derived. "Funny" (see Figure 5) starts with the elements of Tianjin Yangliuqing New Year pictures to design IP images, a series of cultural and creative products in line with modern visual feelings. From the color of Yangliuqing New Year pictures extracted, and the use of isomorphism, replacement techniques for exaggeration and deformation, so that the whole shape is full of spirit and dynamic. The product design that subverts the traditional impression can regain the recognition of the public in a humorous and humorous way and make it conform to the aesthetic of contemporary young people.



Fig. 5. IP Image Expansion Design of "Funny"

3.2 Immersive Situational Experience: Emotional Regression, Immersive Interaction, Emotional Experience

The traditional craft of intangible cultural heritage can add color to modern products and create material experience of national character and difference. Modern technologies represented by the Internet and digital media are important tools for non-inheritors to practice. Modern technology can help non-legacy creative design, fully mobilize a variety of senses to achieve user immersive experience, to achieve deep experience and emotional communication between products and users. For example: Digital "Yang Liuqing" Applet (see figure 6), with the aid of the application of "Internet +" innovative design approach, establish a digital painting from the museum, and the combination of virtual reality, fully arouse readers five senses, with multi-sensory experience, experience, participation to interact, realize the user and the intangible cultural information transmission and emotional exchanges.



Fig. 6. Digital "Yang Liuqing" Applet

3.3 Scientific and Technological Innovation: Material Innovation, Technology Integration

The expression of intangible cultural heritage emphasizes human perception and experience. Integrate intangible cultural heritage into the design of cultural and creative products. It is the unconsciously perceived cultural power of users in the process of interaction. At the same time, scientific and technological intervention and material innovation are also the new trends of cultural and creative products. As shown in FIG. 7, "Internet + Tianjin Intangible Cultural Heritage" desktop supplies system design supplies combines traditional elements with modern design, and makes use of the convenience of Internet products to provide good interaction and use experience for this design. The symbolization of Tianjin traditional intangible cultural heritage is combined with AR technology to enable visual interaction between products and users. The APP can be used to interact with several products to create "small surprises" and improve the so-called "sense of ceremony", so as to deepen people's understanding of intangible cultural knowledge and better protect and publicize Tianjin traditional intangible cultural heritage.

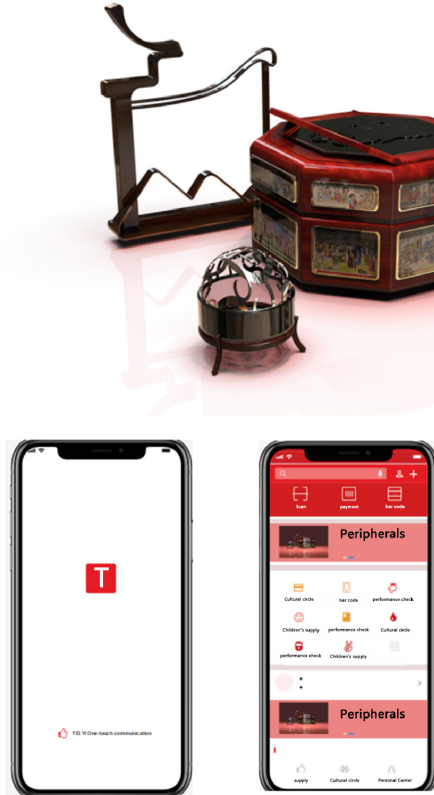


Fig. 7. "Internet + Tianjin Intangible Cultural Heritage" Desktop Supplies System Design

4 Conclusions

Intangible cultural heritage is integrated into cultural and creative design, and the cultural spirit is carried by utensils and objects, so as to realize the creative transformation of cultural value of intangible cultural heritage in contemporary design. With cultural and creative design as the core media, the intelligent reconstruction of cultural communication process and the sustainable and ecological development of cultural resources are realized. The analysis of design elements and design aspects of "Intangible Cultural Heritage + Cultural and Creative Products" lays a foundation for the subsequent research on the design method of "Intangible Cultural Heritage + Cultural and Creative Products", and also provides a good reference and guidance for design practice and design teaching.

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