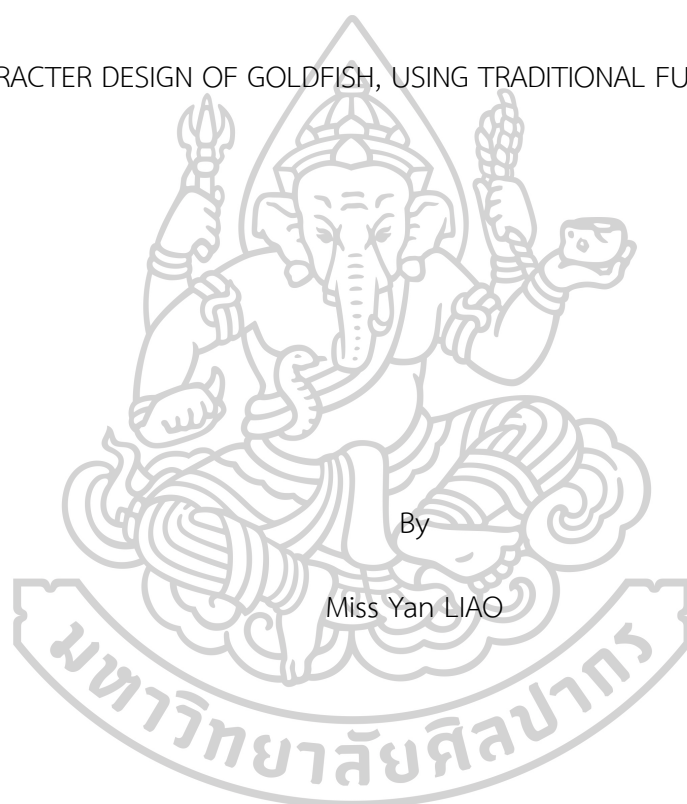




NEW CHARACTER DESIGN OF GOLDFISH, USING TRADITIONAL FUZHOU LACQUERWRE



By

Miss Yan LIAO

A Thesis Submitted in Partial Fulfillment of the Requirements  
for Master of Fine Arts Design Arts (International Program)

Silpakorn University

Academic Year 2024

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Miss Yan LIAO : NEW CHARACTER DESIGN OF GOLDFISH, USING TRADITIONAL FUZHOU LACQUERWARE Thesis advisor : Assistant Professor Dr. Veerawat Sirivesmas, Ph.D.

This study explores the integration and innovative application of Fuzhou lacquerware, a form of Chinese intangible cultural heritage, in the design of a new goldfish character. Drawing from the symbolic meanings of traditional goldfish imagery and the unique techniques of Fuzhou lacquerware—such as gold outlining, flowing lacquer textures, and mother-of-pearl inlay—the research develops a culturally rich and visually engaging character design. Using a combination of literature review, case studies, and practice-based methods, the project follows a complete workflow from 2D concept sketches and 3D modeling to the physical creation of lacquered art pieces. The final work combines digital precision with handcrafted aesthetics, offering a contemporary reinterpretation of traditional craftsmanship. It reflects the potential of cultural heritage to be revitalized and communicated to younger audiences through modern visual design and digital technologies.



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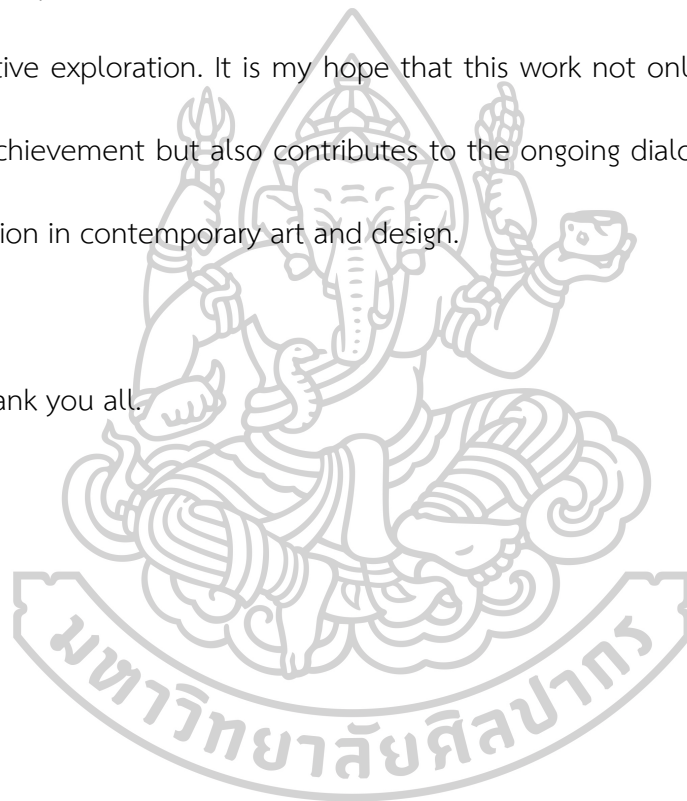
My heartfelt appreciation also goes to the artisans and experts in Fuzhou lacquerware who generously shared their time, knowledge, and craftsmanship with me. Their dedication to preserving cultural heritage has deeply inspired this work, and their contribution is the spiritual backbone of this thesis.

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Thank you all.



Yan LIAO

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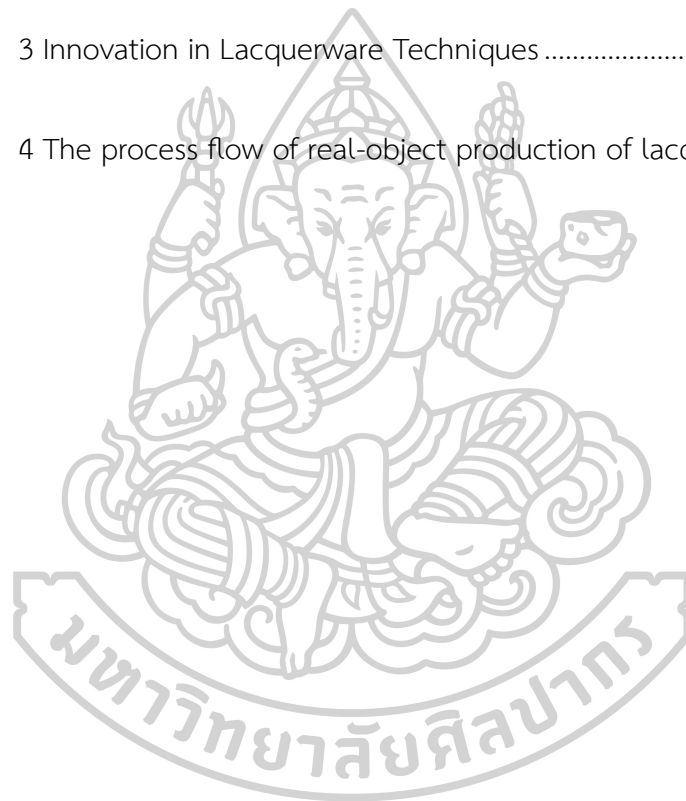
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# CHAPTER 1

## INTRODUCTION

### 1.1 Research Significance

This research is carried out against the backdrop of accelerated globalization, the crisis of traditional culture being lost, and the booming development of the cultural industry. It aims to address the inheritance dilemma of intangible cultural heritage, expand the application scenarios of traditional craftsmanship, and promote the innovative development of the cultural industry. Through the new character design of Fuzhou Ranchu goldfish and its organic combination with the traditional Fuzhou lacquerware craftsmanship, it has important theoretical and practical significance. On the one hand, it injects modern design concepts into Fuzhou goldfish, an intangible cultural heritage symbol with profound cultural connotations, achieving the integration of traditional culture and modern aesthetics. On the other hand, by virtue of the unique visual language and craftsmanship characteristics of traditional lacquerware, it not only expands the application scenarios of traditional craftsmanship in new fields such as cultural and creative products and trendy toys, but also provides new ideas for the inheritance and revitalization of intangible cultural heritage. In addition, the exploration of integrating digital technology with traditional craftsmanship in the research helps to promote the innovative development of the cultural industry, enhance the influence of local cultural brands, and at the same time stimulate the identification and participation of the young generation in traditional culture, which has far - reaching social and economic significance.

### 1.2 Statement of the Problem

With the enhancement of cultural confidence and the in - depth promotion of intangible cultural heritage protection, the combination of traditional craftsmanship and modern design has become an important topic in the design field. The traditional Fuzhou lacquerware craftsmanship, with its unique painting and decoration techniques and exquisite decorative styles, can showcase the profound heritage of outstanding traditional Chinese culture. However, in contemporary design

applications, its innovative expression still has certain limitations, making it difficult to meet the needs of the younger generation for modern aesthetics and personalized expressions.

On the other hand, as a symbol of auspiciousness and agility, the goldfish has rich implications in Chinese traditional culture and widely appears in art forms such as painting, carving, and handicrafts. Due to the profound cultural connotations carried by the goldfish image, it has important value in art design. However, current designs of the goldfish image mostly remain in traditional forms, lacking innovation and a modern sense, which may lead to difficulties in integrating it with contemporary visual arts and the commercial market.

This paper proposes taking the new character design of the goldfish as the core objective, combining the aesthetic characteristics and craftsmanship expressions of traditional Fuzhou lacquerware, and exploring how to make it glow with new vitality in character image shaping, visual expression, and product application through modern design methods while retaining the essence of traditional craftsmanship. Therefore, the purpose of the research is to promote the innovative development of traditional lacquerware craftsmanship, make it more adaptable to the market, and provide new possibilities for the modern expression of traditional culture.

### **1.3 Objectives of the Research**

This research aims to integrate the aesthetic language of traditional Fuzhou lacquerware craftsmanship with the cultural symbolism and biological characteristics of Ranchu goldfish, to design innovative characters that embody regional cultural identity and to explore pathways for applying intangible cultural heritage techniques in modern character design.

1. To analyze and extract core aesthetic elements of traditional Fuzhou lacquerware.

2. To design and prototype a goldfish new character Design using lacquerware aesthetics and techniques

3. To evaluate the integration of traditional aesthetics with modern design through expert and user feedback.

## 1.4 Scope of the Research

This research focuses on the intersection of character design and traditional craftsmanship, specifically exploring the application of the Ranchu goldfish image in new character design and conducting innovative practices in combination with Fuzhou lacquerware craftsmanship. The research will cover the following aspects:

1.Character design theory: Study the basic principles, processes, and methods of character design, as well as how to integrate traditional cultural elements into modern character design. Research the morphological characteristics, cultural connotations, symbolic meanings of Ranchu goldfish, and its applications in artistic creation to make it meet the aesthetic and market demands of young consumers.

2.Fuzhou lacquerware craftsmanship: Study the historical development, craftsmanship characteristics, decorative techniques of Fuzhou lacquerware, and its application value in modern design. Focus on researching Fuzhou lacquerware techniques, especially the "Xipi" technique, and analyze its unique expressions in terms of color, texture, and luster. Explore how to combine traditional lacquerware craftsmanship with modern materials, 3D printing and other technologies to achieve innovative design and production.

## 1.5 Research Framework

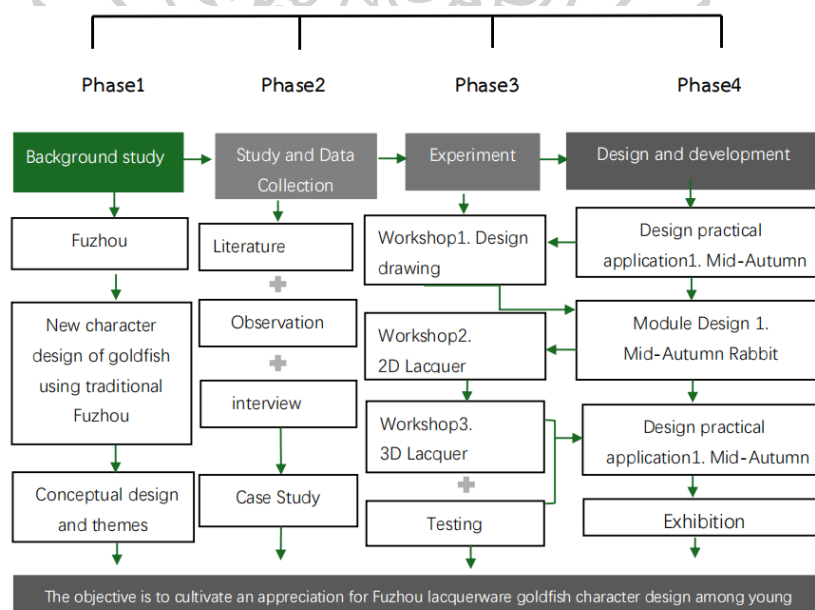


Figure 1 Research Framework

## 1.6 Conceptual Research

This study focuses on the application of new goldfish character design in the context of Fuzhou lacquerware craftsmanship. It aims to explore how traditional Fuzhou lacquer techniques can be integrated with contemporary goldfish character design to construct a trendy visual identity that carries cultural heritage while appealing to modern aesthetics, thereby achieving a contemporary expression of intangible cultural heritage and fostering cultural resonance among younger audiences.

To support this research, relevant literature was systematically reviewed, covering the techniques of Fuzhou lacquerware, the symbolic meanings of goldfish in traditional Chinese culture, and the design principles of contemporary art toys.

Based on the literature analysis, several key variables were identified: the auspicious symbolism and aesthetic features embedded in the cultural image of goldfish; the technical and material characteristics of Fuzhou lacquerware; the design principles that ensure visual recognition, emotional appeal, and narrative identity in modern character design; and the aesthetic preferences, cultural identification, and consumption behavior of younger users. These variables enrich the dimensions of the research and provide theoretical support for the subsequent design development.

Building upon this foundation, the study establishes a conceptual framework guided by the process of “cultural extraction – visual reconstruction – craftsmanship translation.” It proposes that by extracting the decorative language and color system of Fuzhou lacquerware and combining it with the symbolic form and meaning of goldfish, it is possible to achieve innovative integration through digital modeling and character construction. This approach enables the contemporary expression of intangible heritage in the design of new goldfish characters and responds to the core research question: how to respectfully transform traditional lacquer techniques and goldfish symbolism into culturally resonant visual characters for today’s youth. Ultimately, the study aims to promote the regeneration and dissemination of traditional crafts within the realm of digital media and contemporary pop culture.

## 1.7 Research Methodology

This research adopts a practice-oriented research method, combining phenomenological research with experimental design to explore the innovative application of new characters of Fuzhou Ranchu goldfish in traditional Fuzhou lacquer art. The research process is divided into three steps in chronological order:

First, Data Collection and Literature Analysis: Review the literature related to the traditional craftsmanship of Fuzhou lacquerware, the culture of Ranchu goldfish, and character design, and conduct market analysis. Researchers conduct on-site investigations in local Fuzhou lacquerware workshops and art galleries of craftsmanship, and interview lacquer art master's to understand the production process and visual characteristics of the Xipe technique. Analyze all the collected data and extract the key visual elements suitable for character design.

Second, Conceptual Design and Experimental Research: Organize the collected elements into a conceptual design scheme and optimize the design through user research and expert interviews. The research team uses 3D modeling software to construct the digital model of the Ranchu goldfish character and conducts 3D printing experiments to test the adaptability of different materials to lacquer art craftsmanship. Then, conduct Xipi technique experiments on the 3D printed model, explore the influence of different ways of stacking lacquer layers and polishing processes on the final effect, and use experimental data to analyze the key process parameters.

Finally, User Feedback and Optimization: Through questionnaires and expert interviews, collect feedback from trendy toy enthusiasts, intangible cultural heritage craftsmen, and industry experts, and evaluate the IP image, craftsmanship performance, and market acceptance. Optimize the design according to the data.

## 1.8 Research Outcome

**The benefits expected are as follows**

1. Through this research, the combination of traditional Fuzhou lacquerware craftsmanship and modern character design creates a series of new Ranchu goldfish character images that possess both traditional cultural heritage and modern aesthetic

value, providing new ideas for the combination of traditional culture and modern design.

2.Through this research, verify the applicability of traditional Fuzhou lacquerware techniques in 2D digital lacquer paintings and 3D modern products, and promote the development of intangible cultural heritage craftsmanship towards digitalization and fashion. Enhance young people's awareness and interest in Fuzhou lacquerware, so that traditional craftsmanship is no longer limited to traditional objects but is integrated into emerging consumer fields such as trendy toys and cultural and creative products.

3.This research will promote the innovative development of Fuzhou lacquerware, provide practical cases for the transformation of traditional craftsmanship in the digital age, and contribute to the protection and inheritance of intangible cultural heritage. At the same time, it will promote the integration of traditional craftsmanship and modern design, attract more young designers and artists to pay attention to and use intangible cultural heritage techniques, and promote the development of the local cultural and creative industry in Fuzhou.

### **1.9 Definition of Terms**

1.Ranchu Goldfish- It is an egg - type goldfish characterized by the Chinese Ranchu goldfish cultivated in Fuzhou (Fuzhou is known as the "Capital of Goldfish in China"). It is a high - end ornamental goldfish, renowned for its round body shape, gorgeous colors, and unique head growth features. In this study, the Ranchu goldfish is taken as the core element of character design, and traditional craftsmanship is combined with it to endow it with new cultural values.

Character Design- It refers to creating character images with unique appearances, story backgrounds, and market values centered around specific themes or cultural elements, which can be applied in various fields such as trendy toys, animations, and brand promotion. In this study, by designing the character of the Ranchu goldfish, traditional culture is integrated with modern trendy design.

Fuzhou Lacquerware- One of the traditional Chinese lacquerwares' craftsmanship, it originated in Fuzhou, Fujian Province. It is famous for its unique

production techniques and exquisite artistic styles, mainly including bodiless lacquerware, carved lacquerware, Xipe (rhino skin) lacquerware, etc. This study focuses on exploring the application of Fuzhou lacquerware techniques in modern trendy toys.

**Xi Pi (犀皮) Technique-** One of the unique techniques of Fuzhou lacquerware. Through the superposition of multiple layers of colored lacquer and polishing, it forms unpredictable color textures, with rich layers and unique visual effects. In this study, an attempt is made to combine the Xipi technique with 3D printing and apply it to the production of the IP model of the Ranchu goldfish.

**Art Toy-** Toy products with artistic, collection, and trendy cultural attributes. They are usually designed by independent artists or brands, characterized by limited distribution, unique designs, and cultural attributes. In this study, in the form of trendy toys, the IP image of the Ranchu goldfish is combined with Fuzhou lacquerware to expand the modern application of intangible cultural heritage craftsmanship.

**3D Printing-** It is a digital technology that realizes the manufacture of three - dimensional objects by stacking materials layer by layer. In this study, the 3D printing technology is used to realize the physical modeling of the IP character of the Ranchu goldfish, and it is combined with the Fuzhou lacquerware craftsmanship to make the traditional techniques suitable for the modern manufacturing mode.

**Intangible Cultural Heritage, ICH-** It refers to traditional techniques, performing arts, festival activities, etc., which have important historical, cultural, and artistic values but do not exist in physical forms. This study is committed to exploring the modern application of intangible cultural heritage techniques (Fuzhou lacquerware) and promoting its protection and inheritance.

### 1.10 The Relationship between RO, RQ, RM and ROC

RESEARCH QUESTIONS	RESEARCH OBJECTIVES	RESEARCH METHODOLOGY	RESEARCH OUTPUTS
How can traditional Fuzhou lacquerware techniques be applied	To explore the visual aesthetics, materials, and symbolic meanings	Collect and analyze academic papers, books, industry reports, and	Design references and documentation of lacquerware visual

to modern goldfish character design to enhance visual and cultural expression?	of Fuzhou lacquerware and integrate them into the development of contemporary goldfish character designs.	case studies to identify key theories, design principles, and practical applications.	language and techniques.
How can lacquerware-inspired color schemes and surface textures enhance the emotional and cultural appeal of character?	Combine Fuzhou lacquer with art toy design to create products that align with modern aesthetics and appeal to the market.	Color and texture analysis; case studies on color psychology and traditional craft in visual storytelling; prototyping.	Color scheme proposals, surface texture samples, and partial model experiments.
How can digital technologies (like 3D modeling and printing) be effectively combined with handcrafted lacquerware techniques?	To test the feasibility and design value of combining digital and traditional craft in goldfish character modeling.	3D modeling, resin printing, manual lacquer application, and expert/user feedback evaluation.	Final goldfish character toy prototype. user feedback summary design process documentation.

Table 1. The Relationship between RO, RQ, RM and ROC



## CHAPTER 2

### LITERATURE REVIEW

As one of the most significant representatives of China's intangible cultural heritage, Fuzhou lacquerware embodies profound historical and cultural connotations as well as a unique craft language, making it highly valuable in the context of contemporary design for both cultural inheritance and innovative development. This study takes "the application of new goldfish character design in Fuzhou lacquerware craftsmanship" as its research focus, aiming to explore how traditional lacquer techniques can be integrated with modern visual and character design practices, thereby addressing the demand for the revitalized expression of traditional crafts in the contemporary era.

This chapter conducts a systematic literature review around the two core themes of "Fuzhou lacquerware" and "goldfish culture," analyzing the origin, historical development, and technical characteristics of lacquer craftsmanship, as well as its manifestations in contemporary design. At the same time, it summarizes the symbolic meanings of the goldfish image in traditional Chinese culture and artistic expression, to clarify its potential for reinterpretation in modern visual design.

#### **2.1 Cultural Background of Fuzhou Lacquerware**

As a treasure of traditional Chinese craftsmanship, Fuzhou lacquerware has profound cultural connotations and unique artistic values. Its development process reflects the close integration of regional culture and arts and crafts, showcasing the unique cultural charm of the Fuzhou region.(Huang et al., 2021)

##### **2.1.1 Origin and Development of Fuzhou Lacquerware**

As one of the representatives of traditional Chinese arts and crafts, Fuzhou lacquerware has a long history. The lacquer art in Fuzhou can be traced back to the Southern Song Dynasty. The lacquerware unearthed from the Song Dynasty tombs in Cha yuan Village, Fuzhou, is a typical representative work of this period. During the Ming and Qing dynasties, due to the prosperity of maritime trade, it became an important export item on the "Maritime Silk Road". Since modern times, the bodiless lacquerware technique created by the Shen Shao 'an family has propelled it onto

the international stage, winning awards at the World Expos on multiple occasions. Currently, Fuzhou lacquerware has been included in the national intangible cultural heritage list, and its development path has shifted from practical utensils to art collection and cultural and creative derivative. Lacquerware has undergone a transformation from traditional handicrafts to industrial development. Although it was once impacted by the market, in recent years, with the promotion of cultural rejuvenation and intangible cultural heritage protection policies, the application of Fuzhou lacquerware in the field of modern design has gradually attracted attention, providing new opportunities for its innovative development (Li & Wang, 2022).

### 2.1.2 Technological Characteristics of Fuzhou Lacquerware

As one of the four major lacquerware types in China, the development of Fuzhou lacquerware can be traced back to the Three Kingdoms and Wei and Jin dynasties, and it is especially famous for its "polishing lacquerware" technique. Among many decorative techniques, the "Xipi (rhino skin) lacquer technique" and the "mother-of-pearl inlay technique" have received widespread attention in the fields of art, design, and intangible cultural heritage research due to their unique visual features and technical complexity (Qiao, 2004).

**Xi-pi (Rhino Skin) Lacquer Technique:** Xipi lacquer, also known as Xipi, tiger skin lacquer, boluo lacquer, etc., is a technique in the production of ancient Chinese lacquerware. The Xipi lacquer we recognize today is a kind of lacquer with a smooth surface, linear surrounding texture, and distinct layers of different colors. Its production method involves applying and twisting raw lacquer until it is stacked to a certain thickness and then polishing it repeatedly to form patterns similar to pieces of clouds, round flowers, or pine scales (Sun & Shu, 2020).

**Inlay Technique:** As introduced in Wang Shixiang's Explanation of the Record of Lacquer Decoration, "dianluo" is the general term for all shells, which is the transformation of the word "luodian". Since mother-of-pearl inlay is natural, it is also a common traditional decorative art, widely applied to lacquerware, furniture, musical instruments, boxes, woodcarvings, and related handicrafts (Wu Junru, 2020). The mother-of-pearl inlay technique (Chinese: 螺钿工艺) involves embedding thin slices of iridescent shell—often from abalone or pearl oysters—into

the lacquer surface, followed by polishing and multiple layers of coating. This traditional decorative method creates intricate, shimmering patterns and is a signature technique in Fuzhou lacquerware(Han & Guo, 2021).

## 2.2 Cultural Connotations and Visual Evolution of the Goldfish

As a significant symbol of good fortune in traditional Chinese culture, the goldfish has been widely featured in folk art, religious beliefs, and visual decoration. Its image has continuously evolved over time, acquiring new visual languages and cultural meanings. This section provides an overview from the perspectives of cultural symbolism, regional characteristics, traditional artistic representations, and modern trends of symbolization. It lays a theoretical foundation in terms of cultural context and visual semantics for Chapter 3, “Creation of the New Goldfish Character.”



Figure 2 Southern Song Dynasty Carved Lacquer Three-Tier Box



Figure 3 4 De-tai Bamboo Root Vase by Shen Zhenghao

### 2.2.1 Symbolic Meanings of Goldfish in Traditional Chinese Culture

In Chinese culture, because the pronunciation of "goldfish" is similar to that of "gold and jade" (homophonic), goldfish symbolize wealth and good luck. As a symbol of auspiciousness, goldfish have rich implications in traditional Chinese culture (Wang, 2021).

The goldfish archetype studied in this article is the Fuzhou Ranchu, a distinctive variety within Chinese goldfish culture. Fuzhou goldfish hold a unique status, with the "Fuzhou Ranchu" being the most representative. As one of the Ranchu "egg-shaped goldfish" types, the Fuzhou Ranchu is characterized by its lack of a dorsal fin, a prominently developed head growth (wen), a short and rounded body, and a calm, graceful swimming style. It comes in a variety of colors, with common patterns including red and white, red and black, and calico. Locals in Fuzhou affectionately refer to it as the "head-ball fish," not only as an ornamental pet but also as a symbol of prosperity and completeness. (Wang, 2021)

The Fuzhou Ranchu is also regarded as a representative of "Fu culture" (the culture of fortune and blessings), blending seamlessly with Fuzhou's traditions of "Fu" (fortune) and "Shou" (longevity). Its history can be traced back to the Ming and Qing dynasties, making it a quintessential example of the evolution of Chinese goldfish breeds and their integration with regional culture.

In recent years, with the rapid development of emerging media platforms such as short videos and live streaming, the visually captivating Fuzhou Ranchu has attracted a growing fan base. "Seeing goldfish in Fuzhou" has increasingly become a highlight on tourists' itineraries. Furthermore, the Fuzhou goldfish is gradually being transformed into a cultural IP element, integrated into creative products, digital media, and art design, becoming a symbolic part of the city's cultural identity.

### 2.2.2 Representation of the Goldfish Image in Traditional Chinese Art

In traditional Chinese art, the goldfish, as an auspicious totem, frequently appears in Chinese painting, ceramic decoration, embroidery patterns, and lacquerware craftsmanship. During the Ming and Qing dynasties, goldfish were especially favored subjects in bird-and-flower paintings. For instance, the Qing Dynasty painter Xu Gu's *Goldfish and Plum Blossom* vividly captures the elegant

swimming posture and vibrant colors of goldfish with lively brushwork, reflecting not only the painter's skill but also people's longing for a prosperous life.



Figure 5 "Goldfish and Plum Blossoms" Famous painter of the Qing Dynasty, Xugu (1823~1896)

In lacquerware decoration, techniques such as xi pi (rhinoceros-hide lacquer) and gilding were often used to render the glossy texture of goldfish scales, creating a layered and luminous visual effect. For example, goldfish-themed trays and vessels could be found in Qing Dynasty Fuzhou bodiless lacquerware, where the designs emphasized a balance between expressive brushwork and symbolic meaning, conveying themes of good fortune and harmony.



Figure 6 Lidded jar with design of a lotus pond, China; Jiangxi province, Jingdezhen, Ming dynasty(1368-1644)

These traditional visual representations provide both a stylistic and technical foundation for the modern reinterpretation of the goldfish image (Li Qian, 2021).

### **2.2.3 Reinterpretation and Symbolization of the Goldfish Image in Modern Design**

Since the 20th century, the traditional image of the goldfish has been reinterpreted in modern visual design. Designers have moved away from realistic depictions and instead focus on refining graphic language and emphasizing symbolic expression. By simplifying and redesigning the goldfish image, it has been widely applied in areas such as graphic design, animation, fashion, and designer toys. These stylized presentations appeal to younger audiences, meeting their preferences for fun and trendy aesthetics, while still retaining the traditional meanings of prosperity and good fortune(Lin, 2021).

In modern design, the symbolization of traditional visual elements not only reflects the evolution of aesthetic styles but also signifies a shift in the way cultural meanings are communicated. Through stylized and emotionally resonant design, the image of the goldfish has become more appealing to the tastes and consumer psychology of younger generations. This reinterpretation preserves its traditional symbolic meanings while enhancing its potential for commercialization and cross-media dissemination. The goldfish form is often simplified into geometric shapes, lines, or low-poly structures, embodying the minimalist principle of “less is more.” By extracting its key features—such as the rounded body and large tail—this design approach maintains recognizability while improving visual communication efficiency(He, 2018). The simplified form also facilitates subsequent 3D production and makes it more compatible with lacquerware craftsmanship.(Lee, 2021)

At the same time, with the continuous evolution of visual communication, traditional cultural symbols are increasingly blending with fashion and pop culture. Through IP development and the construction of visual systems, traditional cultural imagery gains new life in contemporary contexts. As a visual element, the goldfish now appears in more diverse and flexible forms, strengthening the influence of traditional culture and expanding the expressive possibilities of cultural symbols in a global context.

## **2.3 Application of Traditional Craftsmanship in Modern Design**

### **2.3.1 Integrated Innovation of Fuzhou Lacquerware and Goldfish Characters**

Character design is an important part of modern visual art, and character design combined with traditional culture has become a popular trend in the design field. In recent years, more and more artists have tried to combine traditional craftsmanship with modern character design to create unique images with cultural values.

### **2.3.2 Feasibility of Using Fuzhou Lacquerware for Art Toys**

As a part of trendy culture, art toys emphasize individuality, collection value, and artistry. The three-dimensional lacquer stacking, mother-of-pearl inlay decoration, and other techniques of Fuzhou lacquerware can provide unique decorative styles for art toys, giving them a differential competitive edge in the market. At the same time, the development of 3D printing technology provides technical support for the combination of Fuzhou lacquerware and art toys, making it easier to apply traditional craftsmanship to modern design.(Wei & Zhang, 2024)

In character design, the image of goldfish has smooth curves and flexible dynamic beauty, which complements the soft luster and delicate carving of the lacquerware technique. By integrating the techniques of Fuzhou lacquerware, goldfish characters with the characteristics of Eastern aesthetics can be created, and product development can be carried out with the help of modern digital technology, making them art products that have both cultural value and market potential.

## **2.4 Case Analysis of Character Design Combined with Traditional Culture**

Character design combined with traditional culture has become an important trend, and many successful cases have proved the feasibility of the integration of traditional craftsmanship and modern design.

### **2.4.1 Case Studies of Fuzhou Lacquerware in Modern Design**

In recent years, Fuzhou lacquerware has been innovatively applied in fields such as cultural and creative products, interior design, and jewelry design. For

example, some designers make high-end accessories through lacquerware techniques, giving them both traditional charm and modern fashion sense. In addition, some brands have tried to apply Fuzhou lacquerware to home design, extending the decorative application of lacquer art from traditional utensils to the field of daily life(Chen, 2022).

Creative director Nicolas Ghesquière of Louis Vuitton has collaborated with artisans skilled in traditional Chinese lacquer leather techniques to redesign the iconic hard-sided suitcase into a unique Malle Gonflee handbag. This handbag not only showcases Louis Vuitton's classic style but also incorporates the ancient craftsmanship of Fuzhou lacquerware, resulting in a stunning final product(Wang, 2024).

This case integrates the distinctive characteristics of Fuzhou lacquer craftsmanship with modern high-end luxury products. It not only transforms the intricate features of Fuzhou lacquer into advantages but also fully showcases its understated luxurious texture. By converting disadvantages into strengths, it provides a clear direction for future research in exploring techniques.



Figure 7 Malle Gonflee handbag Louis Vuitton xFuzhou Lacquerware

#### 2.4.2 Analysis of Successful Cases of Combining Traditional Craftsmanship with Art Toys

Pop Mart is a representative of trend culture, quickly gaining popularity with its unique blind box toys, becoming a trend symbol sought after by the younger generation. The brand has earned market recognition through its innovative design philosophy and commitment to quality. Huang Wangwang, a successor of the carving arts, is the fifth-generation heir of a century-old carving family. He not only inherits exquisite carving skills but also combines traditional art with modern aesthetics, creating a distinctive artistic style(Liu et al., 2021).

The collaboration between Pop Mart and Huang WangWang represents a bold exploration of new approaches to the dissemination of traditional Chinese culture. As Japanese design theorist Takashi Asada proposed, "traditional craftsmanship in contemporary society needs to be reinterpreted and translated through modern design language in order to adapt to the ever-changing emerging consumer groups. This theory emphasizes preserving the essence of traditional craftsmanship while employing innovative design strategies to adapt it to the needs of the modern market(Chen, 2024).

It opens new paths for cultural heritage. By integrating with a trendy brand, traditional art is presented to the public in a fresh way, stimulating the younger generation's interest in and exploration of traditional culture(Legaard, 2022).

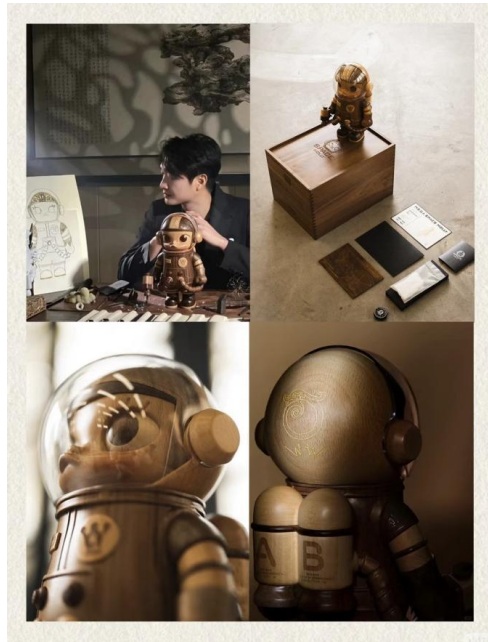


Figure 8 Pop Mart x Traditional Wood Carving

These cases demonstrate that traditional craftsmanship can not only provide modern design with a unique visual style but also enhance its cultural value. Based on this, the integration of Fuzhou lacquerware with goldfish character design can draw on these successful experiences to promote the application and development of traditional craftsmanship in the field of contemporary art.

This chapter will provide theoretical support and methodological guidance for the in-depth development of the research on the integration of the new goldfish character with Fuzhou lacquerware. It aims to clarify the significance of this study in three key aspects: cultural heritage, visual expression, and youth-oriented communication, thereby laying a necessary foundation for the design approach and methodology outlined in Chapter Three.

## CHAPTER 3

### DESIGN PROCESS/ RESEARCH METHODOLOG

#### 3.1 Overview of Research Methodology

This study integrates both quantitative and qualitative research methodologies to ensure the scientific rigor and practical applicability of the design. Initially, a comprehensive literature review and case analysis were conducted to delve into the technical characteristics and cultural significance of Fuzhou lacquerware. This included examining successful instances where traditional craftsmanship has been integrated into modern character design, thereby extracting feasible design strategies.

Subsequently, in-depth interviews were held with inheritors of Fuzhou's intangible cultural heritage in lacquerware craftsmanship to gather expert insights and explore the potential applications of Fuzhou lacquer in contemporary design contexts. This deepened the understanding of Fuzhou lacquer culture.

In the practical design phase, traditional Fuzhou lacquerware techniques—such as raw lacquer coating, mother-of-pearl inlay, dry lacquer powder sprinkling, and gold foil decoration—were applied to modern materials like resin. This experimentation aimed to observe the adaptability and expressive potential of these techniques. Focusing on the "new goldfish character," the study involved modeling, material testing, and surface process trials to explore the fusion of traditional lacquer art with modern language design.

Finally, questionnaires survey was distributed to understand the target user group's (particularly the younger demographic) acceptance and aesthetic preferences regarding the integration of traditional craftsmanship into character design. User testing of the experimental works was conducted to collect feedback data, which was then used to evaluate the effectiveness of the design solutions.

#### 3.2 Classification Types of Research

Practice-based Research:

This research explores the integration of traditional Fuzhou lacquerware techniques with the design of a new goldfish character. The character design draws

inspiration from the cultural symbolism and aesthetic elements of goldfish in Chinese tradition, while also incorporating modern design elements to appeal to a young audience. By combining the traditional craftsmanship of Fuzhou lacquerware with 3D printing technology, the research investigates the emotional resonance and cultural relevance of the character in contemporary design contexts. The iterative design process includes experimenting with materials, textures, and lacquer techniques to create a tangible representation of the goldfish character, allowing for reflection on the cultural significance of lacquerware and its potential to engage younger consumers.

### 1. Design Analysis

The design of the new goldfish character and its incorporation into Fuzhou lacquer techniques focuses on creating a balance between traditional craftsmanship and modern visual aesthetics. The character's design is based on cultural representations of goldfish, symbolizing good fortune, vitality, and emotional connection in Chinese culture. Through the use of traditional lacquer techniques such as mother-of-pearl inlay, dry lacquer powder sprinkling, gold foil application, and natural lacquer coating, the character is designed to evoke feelings of warmth, vitality, and nostalgia, while still maintaining a playful and modern appearance. The color palette, chosen to reflect the natural beauty of the goldfish, incorporates vibrant hues, with gold and red tones symbolizing luck and happiness, while softer hues are used to capture the delicate nature of the character. The design also explores the tactile aspects of lacquerware, offering a rich textural experience that enhances the emotional engagement with the character.

The character design communicates the cultural identity of the goldfish through its aesthetic choices, and through its integration into lacquer art, it invites reflections on the intersection of tradition and contemporary culture. The design's appeal lies in its ability to connect with both the cultural heritage of Fuzhou lacquerware and the sensibilities of modern youth, creating a meaningful cultural experience that encourages emotional connection.

### 2. Experimentation

The research employs iterative design and experimentation, testing various materials, textures, and color schemes to explore how Fuzhou lacquer techniques can be effectively applied to modern design objects. Early iterations focused on using 3D modeling software (e.g., Blender, ZBrush) to create the goldfish character, followed by 3D printing of prototypes in acrylic material. The subsequent application of lacquer techniques on these prototypes allowed for experimentation with adhesion, texture, and color representation.

The process also involved testing different combinations of lacquer techniques on various materials to evaluate their compatibility and durability. Expert feedback from lacquerware artisans and young consumers was gathered to refine the character design and its visual appeal. Additionally, the research explored how the goldfish character could serve as a cultural IP, encouraging a deeper understanding of traditional crafts in contemporary contexts. The iterative design process helped ensure that the final product not only represented traditional craftsmanship but also resonated with modern aesthetic preferences and emotional connections to cultural heritage.

### **3.3 Platforms of Art and Design Research**

1. Research on Design Arts: This study investigates the historical background, cultural symbolism, and aesthetic language of Fuzhou lacquerware, with a particular focus on how traditional techniques—such as mother-of-pearl inlay, dry lacquer powder sprinkling, gold foil application, and natural lacquer coating—can be transformed and applied in contemporary design. Through visual analysis and interpretation of traditional craft imagery, the study extracts visual elements suitable for modern character design. Additionally, by exploring the auspicious and symbolic meanings of goldfish in Chinese culture, the research examines the potential of this cultural figure to resonate emotionally with younger audiences.

2. Research for Design Arts: This study integrates literature review, field research, and material experimentation to explore the adaptability and feasibility of traditional lacquer techniques in art toy design. In the early design phase, character concepts were generated using MidJourney, while Photoshop and Procreate were used to

refine hand-drawn sketches and define the visual style of the goldfish character. 3D modeling was completed using Blender and ZBrush, and physical prototypes were produced via 3D printing. Four lacquer techniques were tested on acrylic boards to evaluate adhesion, color expression, and tactile texture on modern materials. User surveys and expert interviews provided valuable feedback to inform subsequent design iterations.

3. Research through Design Arts: This practice-oriented study adopts a cyclical and iterative design approach to develop a series of goldfish-themed lacquer art toy prototypes. These prototypes serve not only as creative outputs but also as research instruments to validate the integration of traditional craftsmanship with contemporary materials. Each experimental piece involves systematic exploration in terms of technique, material, and expression, demonstrating a regenerative path for traditional handcrafts within the context of contemporary youth culture. From the dimensions of contemporary reinterpretation of traditional crafts, cultural character visual construction, and the revitalization of intangible heritage, this research proposes new approaches to fusing creative design with craft inheritance, establishing an innovative design paradigm for the modern transformation of traditional techniques.

### **3.4 Methodology**

This study focuses on the theme of "New Character design of Goldfish, using by Traditional Fuzhou Lacquerware". It employs a mixed-methods approach, combining both qualitative and quantitative research methods, to systematically explore how traditional Fuzhou lacquerware craftsmanship can be applied to contemporary goldfish character design, followed by validation and optimization.

#### **1. Literature Review**

By reviewing and analyzing relevant literature, this study explores the symbolic meaning of goldfish in traditional culture and the application of lacquerware techniques in modern design. It also examines how designers at home and abroad incorporate traditional crafts into character-based products, enriching the theoretical foundation of the research.

## 2. Case Study

Successful cases of integrating traditional craftsmanship with character design are selected for analysis, focusing on design strategies, integration methods, and market response. This helps identify lacquerware techniques suitable for goldfish character design and explores innovative ways of application.

## 3. Expert Interviews

An in-depth interview was conducted with Mr. Chen Zhaoyun, a recognized inheritor of Fuzhou's intangible cultural heritage in lacquerware craftsmanship. The interview provided valuable professional insights into traditional lacquerware techniques and facilitated a discussion on the potential applications of Fuzhou lacquer in contemporary design contexts. This exchange significantly enriched the researcher's understanding of the cultural and artistic value of Fuzhou lacquerware.

## 4. Experimental Design

The experimental design is carried out on two levels: first, by practically applying and observing the adaptability and expressive potential of various Fuzhou lacquerware techniques—such as raw lacquer coating, mother-of-pearl inlay, dry lacquer powder sprinkling, and gold leaf decoration—on modern materials like resin. Demonstrating a unique visual and material integration between traditional craftsmanship and modern materials. Second, the study focuses on the "new goldfish character" as the core subject, involving modeling, material testing, and surface treatment experiments to explore the integration of traditional lacquer techniques with contemporary design language. Throughout the experiments, special attention is given to controlling visual and tactile elements such as gloss, color saturation, and handcrafted texture, ensuring a balance between artistic value and craftsmanship.

## 5. Questionnaire Survey

To better understand the target user group—particularly younger audiences—and their acceptance and aesthetic preferences regarding the integration of traditional craftsmanship with character design, the study developed a structured questionnaire. The survey covered users' opinions and feedback on the goldfish character, color schemes, material textures, and the application of traditional elements. It was conducted through paper-based questionnaires, and the collected

data was statistically analyzed to support the direction of the goldfish character design and to provide a foundation for design optimization during the experimental phase.

<p><b>Survey Topic: User Preference Survey on the Integration of Traditional Craft and Character Design</b></p> <p>We are conducting a design research study on the application of traditional lacquerware techniques in goldfish-themed character design. This survey aims to understand your opinions on character appearance, color combinations, and traditional elements. The results will be used for academic research, and all responses will remain anonymous. Thank you for your participation!</p> <p><b>1. What is your age group?</b></p> <p><input type="checkbox"/> 18 and under</p> <p><input type="checkbox"/> 19–25</p> <p><input type="checkbox"/> 26–35</p> <p><input type="checkbox"/> 36–45</p> <p><input type="checkbox"/> 46 and above</p> <p><b>2. What is your occupation?</b></p> <p><input type="checkbox"/> Student</p> <p><input type="checkbox"/> Designer / Art practitioner</p> <p><input type="checkbox"/> Teacher / Researcher</p> <p><input type="checkbox"/> Other (please specify): _____</p> <p><b>3. Do you like character or image designs based on goldfish?</b></p> <p><input type="checkbox"/> Love it</p> <p><input type="checkbox"/> Like it</p> <p><input type="checkbox"/> Neutral</p> <p><input type="checkbox"/> Don't like it</p> <p><b>4. If you saw an art toy inspired by a "goldfish" design, what aspects would attract you the most? (Select all that apply)</b></p> <p><input type="checkbox"/> Shape design</p> <p><input type="checkbox"/> Color scheme</p> <p><input type="checkbox"/> Surface texture</p> <p><input type="checkbox"/> Craft characteristics</p>	<p><b>5. How do you feel about the following traditional color combinations in character design?</b> (1 = Strongly dislike, 5 = Strongly like)</p> <p>Black + Gold + Red <input type="checkbox"/>1 <input type="checkbox"/>2 <input type="checkbox"/>3 <input type="checkbox"/>4 <input type="checkbox"/>5</p> <p>Red + Yellow + Blue <input type="checkbox"/>1 <input type="checkbox"/>2 <input type="checkbox"/>3 <input type="checkbox"/>4 <input type="checkbox"/>5</p> <p>Gold and Silver accents <input type="checkbox"/>1 <input type="checkbox"/>2 <input type="checkbox"/>3 <input type="checkbox"/>4 <input type="checkbox"/>5</p> <p><b>6. Regarding surface texture, which style do you prefer?</b></p> <p><input type="checkbox"/> Glossy (e.g., lacquerware, glass, metal)</p> <p><input type="checkbox"/> Matte or frosted (e.g., ceramic, soft vinyl)</p> <p><input type="checkbox"/> Granular (e.g., glitter, dry lacquer powder effect)</p> <p><input type="checkbox"/> No specific preference</p> <p><b>7. Would you consider purchasing an art toy featuring "traditional craftsmanship" elements?</b></p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> Depends on the design</p> <p><input type="checkbox"/> No</p> <p><b>8. Which traditional craft elements interest you the most? (Select all that apply)</b></p> <p><input type="checkbox"/> Lacquer (glossy surface)</p> <p><input type="checkbox"/> Mother-of-pearl inlay (shell luster)</p> <p><input type="checkbox"/> Gold leaf decoration</p> <p><input type="checkbox"/> Handmade texture</p> <p><input type="checkbox"/> Not particularly interested</p> <p><b>9. Do you think traditional craftsmanship can be better preserved and promoted through art toys?</b></p> <p><input type="checkbox"/> Strongly agree</p> <p><input type="checkbox"/> Somewhat agree</p> <p><input type="checkbox"/> Disagree</p> <p><b>10. Do you have any suggestions or thoughts on "combining traditional craftsmanship with modern character design"? (Please feel free to write)</b></p>
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Figure 9 Questionnaire Survey

### 3.5 Examples for Design Process

#### 3.5.1 Design and Implementation of a Mid-Autumn Art Installation in Chinatown

Using the Luenrit community's Mid-Autumn Festival public art as a platform, this project designs a series of rabbit-shaped installations to explore the transformation of traditional Fuzhou lacquerware color schemes into contemporary artistic expressions. The design integrates natural color elements commonly used in Fuzhou lacquerware and incorporates the unique gloss and texture of lacquer materials to bring traditional craftsmanship into a modern visual context. The process begins with an in-depth study of the structure and cultural symbolism of traditional lacquerware colors—such as red symbolizing good fortune, yellow representing nobility, blue signifying tranquility, and gold and silver conveying wealth and sacredness. Drawing upon these symbolic meanings, the project adapts red, yellow, blue, gold, and silver tones to align with the community's aesthetic preferences and cultural background, creating rabbit installations that blend local identity with modern design. Special attention is also given to the functionality, site adaptability, and interactivity, ensuring that the artworks hold both artistic value and community appeal.

##### **1. On-site Investigation and Site Measurement:**

At the initial stage of the project, the team conducted an on-site investigation and measurement at the main event venue—Luenrit community in Chinatown. Spatial dimensions, lighting conditions, and pedestrian flow patterns were recorded. This process not only provided data to support the scale and form of the installation design but also ensured that the design was closely aligned with the local community context. During the visit, local residents were also interviewed to collect their memories and expectations surrounding the Mid-Autumn Festival, which served as valuable input for the narrative elements of the design.

##### **2. Character Design Practice:**

Design of the “Mid-Autumn Rabbit” Art Toy Installation: Based on the findings from the site investigation, the design concept centered on a “Mid-Autumn Rabbit”

as the core visual figure, leading to the development of an interactive art toy installation. The initial form drew inspiration from the Jade Rabbit in the Chinese folktale Chang'e Flying to the Moon, integrating symbolic elements of reunion and the moon associated with the Mid-Autumn Festival. This gave the installation both emotional resonance and narrative potential.

(1) First Draft of the Mid-Autumn Rabbit Installation:

The initial design adopted the rabbit figure as the foundation and applied traditional Fuzhou lacquerware color schemes, including classic tones such as red, gold, and deep black. These high-saturation colors showcased the visual richness of lacquer art. The surface patterns on the rabbit were inspired by the “floating lacquer” (piaoqi) technique, which produces randomized, fluid textures, imbuing the installation with a dynamic and distinctly Eastern aesthetic.



Figure 10 First Draft of the Mid-Autumn Rabbit Installation

(2) “Cloud Pattern” Upgraded Version of the Mid-Autumn Rabbit:

To further enhance the cultural relevance to the Mid-Autumn Festival, the second version of the rabbit underwent visual refinement. While maintaining the high-saturation lacquer colors, the body patterns were replaced with traditional “cloud patterns” derived from classical Chinese decorative motifs found in lacquerware. These elements symbolically the night sky, auspicious clouds, and the moon, reinforcing the festive atmosphere while preserving the artistic language of traditional ornamentation.



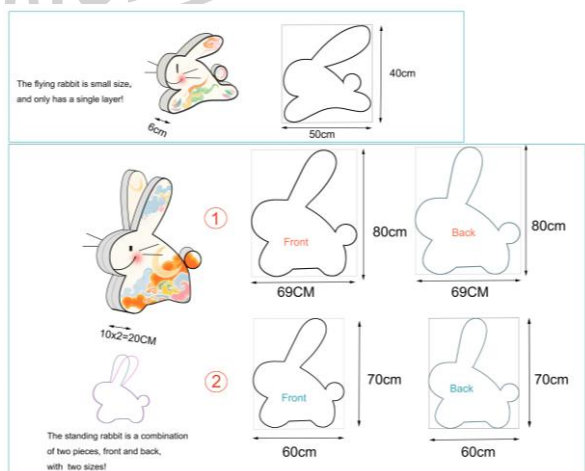
Cloud chasing the moon:  
a pattern representing the  
Mid-Autumn Festival clouds  
(from the lacquer art pattern)

Lacquerware patterns are exquisite and diverse, such as cloud patterns, dragons and phoenixes, flowers and birds, and landscapes. This study focuses on cloud patterns as a source of design material for the Mid-Autumn Festival event in the Chinatown community.

Figure 11 Mid-Autumn rabbit “Cloud Pattern” Design

### 3. Production and Implementation:

Based on the preliminary design plan, the project moves into the production phase, including dimensional drafting, rabbit model fabrication, application and painting of lacquer techniques, and final installation and display, completing the full transformation from concept to physical realization.



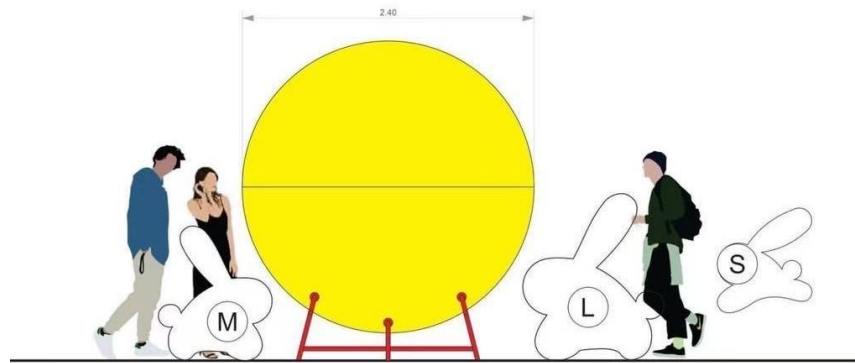


Figure 12 The production size drawing of the Mid-Autumn rabbit installation art



Figure 13 The drawing of the Mid-Autumn Festival rabbit

#### 4.Exhibition Testing:



Figure 14 Finished Product: Mid-Autumn Rabbit Installation Art



Figure 15 Group photo of community activities

### 3.5.2 The iteration from two-dimensional lacquer painting to three-dimensional goldfish collectibles

Based on the development process of goldfish character design, the design thinking process in this study can be further refined as follows:

#### 1. Two-Dimensional Design Stage:

(1) Sketch Design: At the initial stage of the design, the concept revolved around the cultural image of the “Ranchu Goldfish.” Inspired by its distinctive biological features—such as the high dorsal fin, fan-shaped tail, and bulging eyes—the design integrates elements from the abstract style of Wassily Kandinsky. The visual language of traditional Fuzhou lacquerware, including cloud patterns and wave motifs, was fused with the goldfish’s natural textures like scales and fins, creating a new hybrid graphic language that blends the figurative with the abstract.

User research focusing on young audiences revealed a strong preference for “anthropomorphic” and “cute” aesthetics. As a result, the design direction was positioned toward stylized Q-version characters, commonly found in designer toys, and a series of anthropomorphic sketches were developed accordingly.

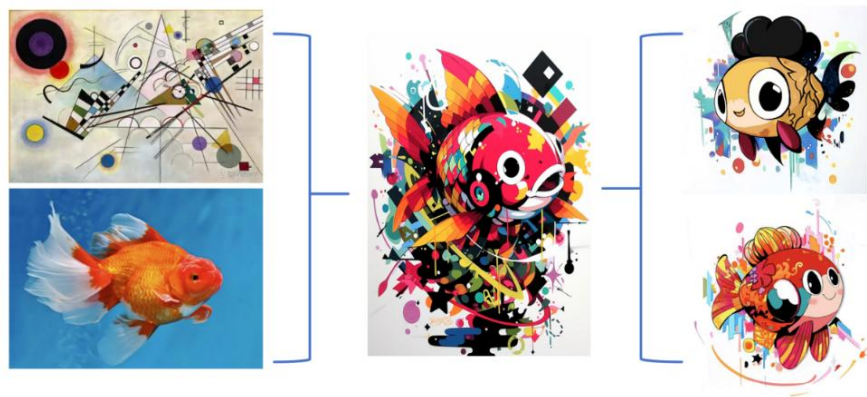


Figure 16 Sketch Design

(2) Two-Dimensional Lacquer Painting Practice and Experimental: In this stage, a set of visual experiments were conducted based on traditional lacquer painting techniques. The experiments explored how the color schemes, surface textures, and decorative patterns of Fuzhou lacquerware could be translated into two-dimensional visual expressions for character design. Techniques such as layering, splashing, and color diffusion were tested to simulate effects like Xi Pi (犀皮) texture and Piao Qi (飘漆) flow, aiming to establish a visually rich and culturally grounded foundation for the three-dimensional transformation that follows.

## 2. Two-Dimensional Lacquer Painting Practice and Experimental:

Between traditional craftsmanship and modern materials. Experiment with various lacquerware techniques to observe their adaptability to modern materials. Experiments were conducted using four traditional lacquer techniques—luodian inlay (mother-of-pearl), dry lacquer powder sprinkling, gold foil application, and natural lacquer coating—on acrylic sheets to observe their adhesion, color performance, and durability. While the natural lacquer was still semi-dry, corresponding materials were sprinkled onto specific areas: lacquer powder in various colors, charcoal powder for black sections, and silver foil powder for white areas. After natural drying and setting, the excess powder was gently brushed off. Additional polishing was performed as needed. The final result produced a decorative lacquer surface with a tactile, grainy texture and a matte or shimmering finish, demonstrating a unique visual and material integrati.




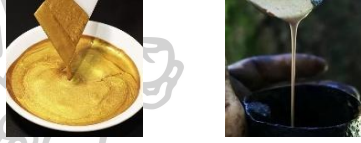

Display of test experiment materials	
Mother-of-pearl	
Dry lacquer powder sprinkling	
Gold foil	
Natural lacquer coating	
Polishing Sandpaper	

Table 2 Display of test experiment materials



Figure 17 2D goldfish lacquer painting

### 3. Three-Dimensional Transformation Phase

This stage primarily focuses on transforming two-dimensional images into tangible three-dimensional artworks. By integrating digital modeling with traditional

lacquer techniques, the new goldfish character evolves from a conceptual image into a visible and touchable physical form.

### (1) Goldfish Character Design:

The initial stage involves extracting key elements from goldfish culture and lacquerware art to design the goldfish character. A set of three-view drawings (front, side, and back) is created to define the character's body proportions and dynamic posture. Considering the requirements of lacquer coloring techniques in later stages, the overall form is designed with smooth geometric curves and arcs.

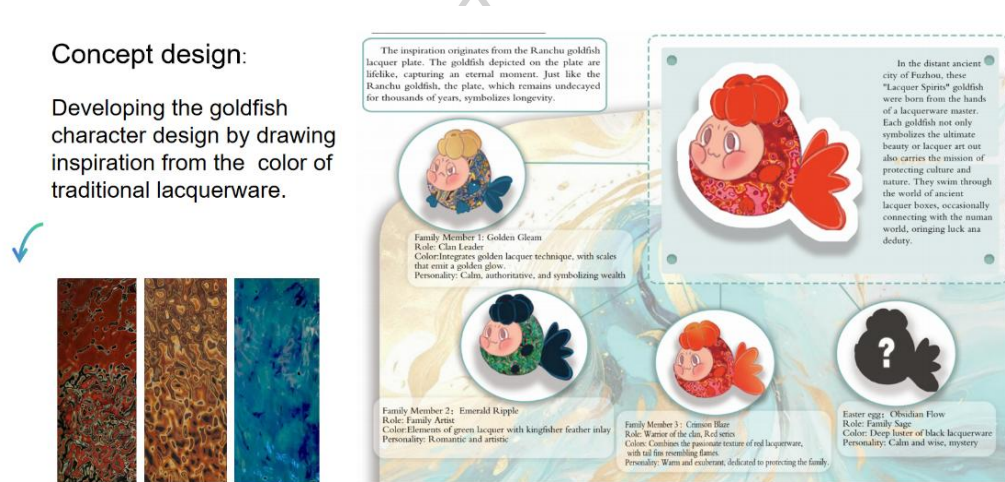


Figure 18 Goldfish Character Design

### (2) 3D Modeling and Structural Optimization:

After the character design is finalized, 3D modeling software is used to build the model based on the three-view drawings, accurately restoring the goldfish character's proportions, details, and dynamic form. During the modeling process, the structure is enclosed and adjusted to avoid overhangs and ensure appropriate thickness for 3D printing feasibility. At the same time, the surface is divided into functional areas according to the requirements of lacquer craftsmanship, with reserved spaces for decorative patterns and accessory grooves to facilitate later hand-finishing.

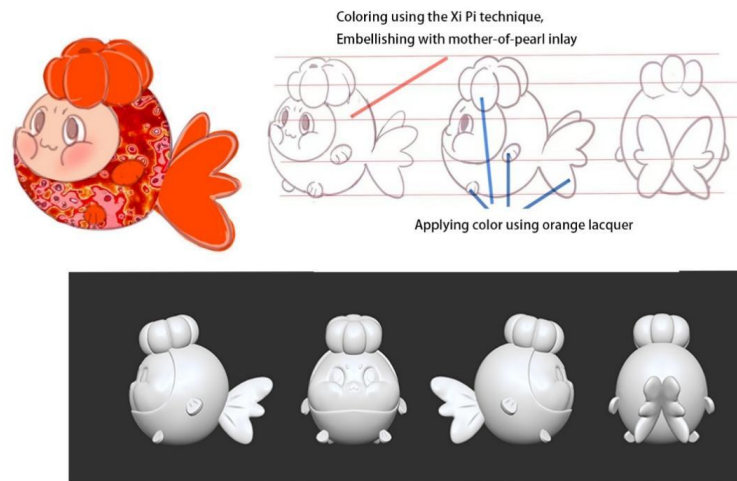


Figure 19 Three views and Three-View Display of 3D Model

#### (3) 3D Printing and Base Model Preparation

The model is exported for 3D printing. After the printed blank has dried, sandpaper is used to polish and clean the surface in preparation for lacquer application.

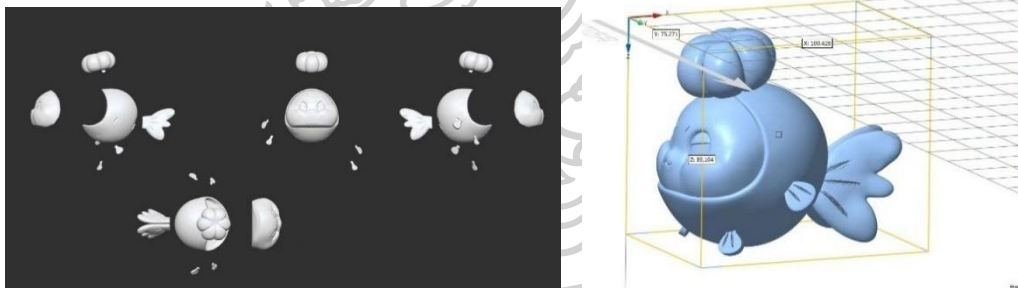


Figure 20 Disassemble the 3d model to prepare for the later 3D printing

#### (4) Implementation of Three-Dimensional Lacquer Art

The polished 3D printed blank is coated with lacquer layer by layer. Each layer of lacquer is applied and dried under controlled temperature and humidity conditions, followed by repeated sanding and curing to ensure a durable and textured lacquer surface. The final product combines the precision of digital modeling with the warmth of handcrafted lacquer art, showcasing the cultural creativity of the goldfish character and the unique beauty of Fuzhou lacquerware.



Figure 21 polish surface in preparation for lacquer application

To enhance the adhesion of Fuzhou lacquer on three-dimensional curved surfaces, two innovative techniques were developed: the Layered Controlled Texturing Technique of Curved Surface Rhinoceros Hide Lacquer and the Innovative Mother-of-Pearl Inlay Technique for Complex Curvatures.

#### Layered Controlled Texturing Technique for Curved Surfaces:

This innovative method applies rhinoceros hide lacquer to complex curved surfaces to achieve rich depth and fine texture. Process Overview: The lacquer is brushed on in multiple layers. While still semi-wet, each layer is shaped using fine tools to create controlled patterns. After shaping, the surface is gently sanded and cured. All layers are dried in stable temperature and humidity to ensure smooth, strong adhesion without cracks or bubbles.

#### Innovative Mother-of-Pearl Inlay for Complex Curvatures:

Traditional mother-of-pearl inlay involves embedding finely cut shell pieces into lacquer surfaces to create decorative patterns, but it often faces issues like shell deformation or detachment when applied to complex curved forms. This innovative technique solves these problems by selecting elastic, high-quality shells that are cut into ultra-thin slices for better adaptability. The shell pieces are embedded into semi-dried lacquer and then sealed with multiple transparent layers to enhance durability, gloss, and depth. This method extends the application of mother-of-pearl inlay from flat surfaces to intricate three-dimensional forms, effectively blending traditional craftsmanship with modern design innovation.

Item	Layered Controlled Texturing Technique of Curved Surface Rhinoceros Hide Lacquer	Innovative Mother-of-Pearl Inlay Technique on Complex Curvature Surfaces
Technique Features	Layer-by-layer lacquer application with drying and sanding; controlled texture	Ultra-thin shell pieces segmented and bent to fit complex curved surfaces
Materials	Rhinoceros hide lacquer (natural lacquer with particle additives)	High-quality natural mother-of-pearl shell pieces
Technical Challenges	Creating and controlling textures and layers on curved surfaces	Bending shell pieces to fit without cracking or detachment
Key Process Steps	Base sanding → layered lacquer application → texture carving → sanding and curing	Shell cutting and polishing → segmented bending → elastic bonding → multilayer protective lacquer
Advantages	Achieves delicate texture and layered effect on complex curved surfaces	Enables complex curved surface inlay with enhanced adhesion and stability
Application Breakthrough	Extends traditional rhinoceros hide lacquer from flat to complex 3D curved surfaces	Breaks flat surface limitation of mother-of-pearl inlay for multi-angle 3D modeling

Table 3 Innovation in Lacquerware Techniques



## CHAPTER 4

### DESIGN DEVELOPMENT

#### 4.1 Outputs for Design Development: Design Results

The principal outcome of this design process is the “Lacquerware Goldfish” series of art toys. This collection fuses newly developed goldfish character imagery with traditional Fuzhou lacquer techniques, using a contemporary design language to reinterpret intangible cultural heritage and create innovative cultural products for young consumers. The forms are realized through 3D modeling and printing, then surface-decorated with hallmark Fuzhou methods—multi-layer lacquer coating, xi-pi Technique, and mother-of-pearl inlay—merging time-honored craftsmanship with modern materials to achieve both technical and artistic innovation.

Not only does this series preserve the characteristic depth of color and glossy texture of Fuzhou lacquerware, it also endows the goldfish characters with enhanced visual impact and cultural narrative function, reflecting contemporary youth’s focus on emotional expression, aesthetic taste, and cultural identity. Playful, trendy, and anthropomorphic elements are integrated into the sculptural design to better meet the aesthetic and emotional communication needs of the younger generation. Through personalized shaping of the goldfish imagery and diversified applications, the series establishes a cultural persona capable of sustainable extension.

These art toys possess high display and collectible value while carrying the mission of disseminating and revitalizing traditional craftsmanship. By translating Fuzhou lacquer techniques into tangible, accessible contemporary art objects, the project explores shifting intangible heritage from “traditional exhibition” to “youth lifestyle,” thereby strengthening the connection and interaction between traditional craft and modern design in the consumer market.

## 4.2 Examples for Design Development

### Concept design:

Through the questionnaire survey, people prefer anthropomorphic characters.

Integrating the form, color, and material of lacquerware plum vase with the cultural symbolism of goldfish as wealth to create an anthropomorphic character design.

**ELEMENT EXTRACTION:**  
 She wear gold coin decorations on their head, symbolizing nobility and wealth. Her hair is designed based on the distinctive head shape of the Lanshou Goldfish, which is round and full, showcasing the goldfish's adorable and endearing appearance. The body curves are inspired by the shape of the lacquerware meiping vase, enhancing the character's fun and recognizability.

**INTRODUCTION:**  
 Name: Xiao Hong Su  
 Personality: Cute and sexy, love to step on the waves  
 Attributes: Fortune/Fortune

Gold coin hair accessories, symbol of wealth

Color and pattern

Built like a lacquered plum vase

### 3D WHITE MODEL:



Figure 22 Anthropomorphic lacquerware Goldfish Character Rendering

The coloring process of lacquerware goldfish		
1.lacquering	2.Twist	3.lacquer polishing
		
4.shade drying	5.lacquering again	6.polish again
		

Table 4 The process flow of real-object production of lacquered goldfish



Figure 23 Physical Production and Craft Process of lacquerware goldfish art toy

# Graduation Exhibition



Figure 24 Graduation Exhibition



Figure 25 The final lacquered goldfish product



## CHAPTER 5

### CONCLUSION

#### 5.1 Conclusion

This study creatively integrates the unique morphological characteristics of the Ranchu goldfish with traditional Fuzhou lacquerware techniques to design a new goldfish character. It provides a fresh perspective on incorporating traditional cultural elements into modern design. Through an in-depth analysis of the Ranchu goldfish's form and an exploration of Fuzhou lacquerware craftsmanship, we investigated how traditional handcraft techniques can be fused with contemporary visual design. The combination of Fuzhou lacquerware and the newly developed Ranchu goldfish character presents an innovative approach to cultural and creative design. This method not only enriches the artistic expression of the Ranchu goldfish but also offers new ideas for the modernization of traditional lacquerware techniques. By merging disciplines, this study serves as a valuable reference for cultural preservation and innovative design, with significant theoretical and practical implications.

#### 5.2 Discussion

In the first part of the study, we thoroughly analyzed the Ranchu goldfish's morphological traits, including its head growth, short body, and tail fins, and explored its symbolic meanings in traditional culture. In the second part, we conducted an in-depth study of Fuzhou lacquerware techniques, focusing on the structural potential of "bodiless" lacquerware and the visual expressiveness of decorative methods such as mother-of-pearl inlay and gold tracing. Based on this foundation, we designed and developed a set of goldfish characters that blend features of both elements. The designs highlight the elegant form of the Ranchu while incorporating the rich colors and textures of lacquerware craftsmanship, creating characters with distinct artistic value.

#### 5.3 Recommendation

The results of this research not only offer new aesthetic references for character design but also expand the application of traditional crafts in contemporary art creation. By combining digital modeling with handcrafted techniques, the

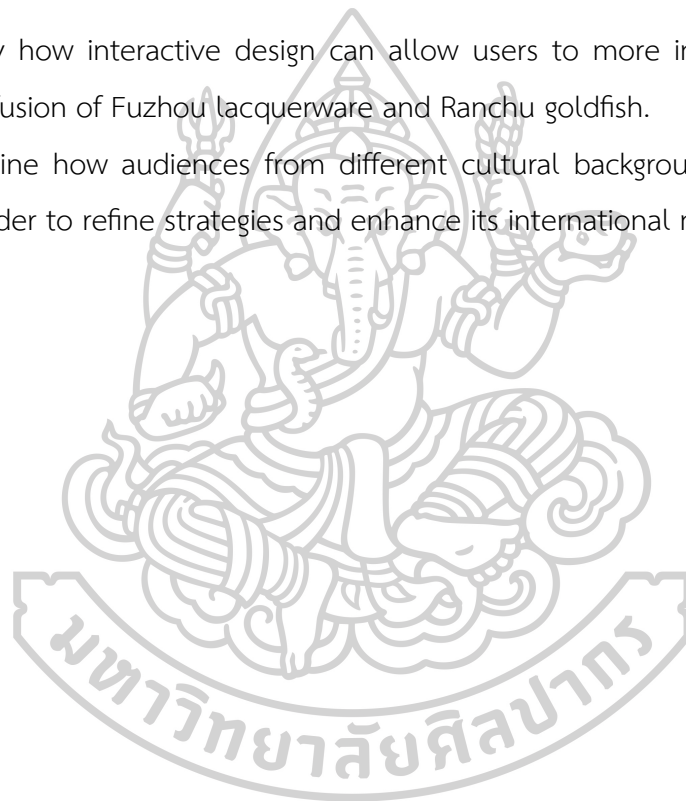
outcomes can be applied across various fields such as animation, gaming, and art merchandise, breathing new life into traditional culture. Additionally, this research serves as a reference for the innovative development of intangible cultural heritage, helping to integrate it more effectively into modern design systems.

Future research could further explore the following directions:

Investigate additional ways to apply Fuzhou lacquerware techniques in character design, such as using modern materials to simulate the gloss and texture of lacquer.

Study how interactive design can allow users to more intuitively experience the artistic fusion of Fuzhou lacquerware and Ranchu goldfish.

Examine how audiences from different cultural backgrounds respond to this design in order to refine strategies and enhance its international market potential.



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VITA

