

**STUDY THE CULTURE CRAFTSMANSHIP OF SHE INKSTONES
FROM THE QING DYNASTIES TO PRODUCT DESIGN**



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Title	STUDY THE CULTURE CRAFTSMANSHIP OF SHE INKSTONES FROM THE QING DYNASTIES TO PRODUCT DESIGN
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ABSTRACT

This research investigates the traditional craftsmanship of She inkstones from the Qing dynasties and explores their innovative application in contemporary product design. The study aims to bridge historical cultural heritage with modern aesthetic and functional requirements by analyzing the artistic characteristics, material properties, and symbolic meanings of She inkstones. Through literature review, expert interviews, and field investigations in She County, the project documents traditional carving techniques and evaluates their relevance to modern product development. A prototype She inkstone was designed using ABS plastic due to resource scarcity, incorporating classical elements such as dragon patterns and Huizhou cultural motifs. A user satisfaction survey targeting 99 young participants aged 18–24 in Huizhou Town was conducted to assess the design's reception. The findings indicate that integrating traditional aesthetics with ergonomic and sustainable materials can enhance cultural product appeal among younger generations. The study not only revitalizes endangered intangible heritage but also provides practical strategies for cultural innovation in the product design field.

Keywords: She inkstone; Qing Dynasty; traditional craftsmanship; cultural product design; Huizhou culture

บทคัดย่อ

การวิจัยครั้งนี้ศึกษางานหัตถศิลป์ดั้งเดิมของดลับทหมึกหิน "She" จากราชวงศ์ซิง และสำรวจการประยุกต์ใช้อย่างสร้างสรรค์ในงานออกแบบผลิตภัณฑ์ร่วมสมัย โดยมีเป้าหมายเพื่อเชื่อมโยงมรดกทางวัฒนธรรมดั้งเดิมเข้ากับความต้องการด้านความงามและการใช้งานในยุคปัจจุบัน ผ่านการวิเคราะห์ลักษณะทางศิลปะ คุณสมบัติของวัสดุ และความหมายเชิงสัญลักษณ์ของดลับทหมึกหินชนิดนี้

จากการทบทวนวรรณกรรม สัมภาษณ์ผู้เชี่ยวชาญ และลงพื้นที่สำรวจในอำเภอ She งานวิจัยได้บันทึกเทคนิคการแกะสลักดั้งเดิม และประเมินความเหมาะสมในการพัฒนาเป็นผลิตภัณฑ์สมัยใหม่ ต้นแบบของดลับทหมึกหินถูกออกแบบโดยใช้วัสดุ พลาสติก ABS (อะครีโลไนไตรล์-บิวทาไดอีน-สไตรีน) เนื่องจากทรัพยากรดั้งเดิมมีจำกัด โดยผสานองค์ประกอบคลาสสิก เช่น ลวดลายมังกรและสัญลักษณ์วัฒนธรรม ฮุยโจว (Huizhou)

ได้มีการสำรวจความพึงพอใจของผู้ใช้งานจำนวน 99 คน อายุระหว่าง 18-24 ปี ในเมือง ฮุยโจว (Huizhou) เพื่อประเมินการตอบรับของการออกแบบ ผลการวิจัยแสดงให้เห็นว่าการผสมผสานความงามแบบดั้งเดิมกับวัสดุที่เป็นมิตรต่อสิ่งแวดล้อมและสอดคล้องตามหลักศาสตร์ สามารถเพิ่มเสน่ห์ของผลิตภัณฑ์วัฒนธรรมในกลุ่มคนรุ่นใหม่ได้ งานวิจัยนี้ไม่เพียงช่วยฟื้นฟูมรดกภูมิปัญญาที่ใกล้สูญหาย แต่ยังเสนอกลยุทธ์ที่เป็นรูปธรรมสำหรับนวัตกรรมทางวัฒนธรรมในสาขาการออกแบบผลิตภัณฑ์อีกด้วย

คำสำคัญ: การออกแบบแทนหมึก ราชวงศ์ซิง งานฝีมือดั้งเดิม การออกแบบผลิตภัณฑ์ทางวัฒนธรรม วัฒนธรรมฮุยโจว



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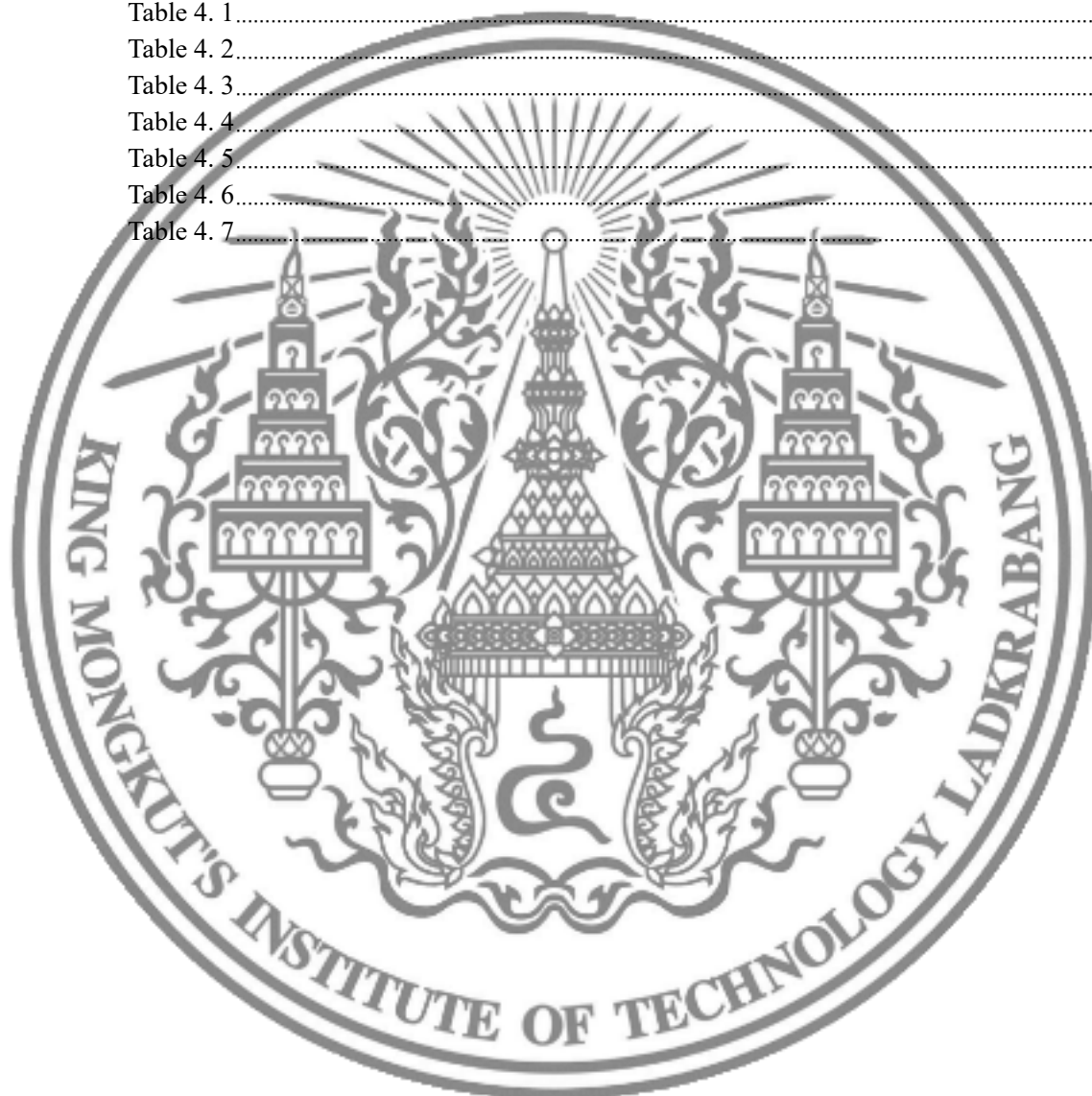
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CHAPTER 1

INTRODUCTION

1.1 Background and Significance of the Problem

Traditional crafts are an integral part of Chinese culture, embodying the wisdom and creativity of the Chinese nation over thousands of years. (Yao,2012) Although the inheritance and protection of traditional crafts have gained widespread recognition, with the acceleration of urban and rural modernization and the impact of modern industrial civilization, they face challenges of modern transformation. (Liu, 2009) Analysis of the current state of traditional Chinese arts and crafts industries reveals several issues: most enterprises are private and small-scale, with over 70% being small businesses; there is a lack of professional talent and outdated production technology; the management of professional markets is disorganized, and there is a lack of legal protection and constraints.

The inkstone is one of the important categories of traditional Chinese artifacts, known as the crown of the "Four Treasures of the Study," and represents an integration of aesthetics and practicality in ancient Chinese artistic design. The inkstone was created out of necessity and has evolved from a tool for use to an art piece that combines appreciation and utility.

With a keen interest in studying and researching Chinese traditional artifacts, the author has chosen a unique product design topic—the design of inkstones—for research. (Xiong, 2016) This paper does not conduct an exhaustive historical study of inkstone design but instead narrows its focus to one of the Four Great Inkstones—the She inkstone.

The She inkstone is quarried from Longwei Mountain in the ancient state of Shezhou (which, geographically, is close to the Anhui side of the intersection of Anhui, Zhejiang, and Jiangxi provinces. It was established as a county during the Qin Dynasty and as a state called Shezhou during the Tang Dynasty). (Yu et al, 2012) The She inkstone is one of the manifestations of Huizhou culture (which includes urban planning, village layouts, Hui-style architecture, commercial customs, patriarchal systems, Neo-Confucianism of Xin'an, Xin'an literature, Xin'an School of Painting, Hui-style seal engraving, Hui-style gardens, Huizhou opera, Xin'an medicine, Cheng Dawei's abacus method, She inkstone making, festival customs, dialects, and other ways of life and social customs. These cultural manifestations exist in both tangible cultural heritage and intangible cultural heritage).

The Chinese government has always attached great importance to the protection of cultural heritage and the promotion of excellent traditional culture, and has made

significant efforts in this regard with notable achievements. (Chen, 2018) On May 20, 2006, the She inkstone-making technique was approved by the State Council and included in the first batch of national intangible cultural heritage lists. On June 5, 2007, Cao JiQing from She County, Anhui Province, was designated as the representative inheritor of this cultural heritage by the National Ministry of Culture and was included in the first batch of 226 representative inheritors of national intangible cultural heritage projects. Modern inkstone artisans have continuously carried forward the tradition of She inkstones, which have been used as state gifts on multiple occasions. In 1965, the She treasures "Lotus Leaf Inkstone" and "Locust Inkstone" were presented to Chairman Ho Chi Minh of Vietnam by the Huizhou Municipal Committee (He, 2016). In 1966, the She treasures "Landscape Inkstone" and "Huai Su Inkstone" were presented to Chairman Mao Zedong by representatives from She County Middle School visiting Beijing. In 1980, the She treasure "Jade Belt Venus Inkstone" was given as a gift by Vice Premier Wan Li during his visit to Japan. A work by the She inkstone master Zheng Han, titled "footprints of Huangshan," was presented by Premier Li Peng as a "state gift" to Emperor Akihito of Japan in November 1997 (Yue, 2015). His work "Chinese Dragon" inkstone was again given by General Secretary Hu Jintao to French President Jacques Chirac in February 2004.

This paper aims to conduct research on the She inkstone, one of the Four Great Inkstones, from the perspective of modern product design. By integrating modern design concepts and elements, it attempts to explore the development and design of the She inkstone to better adapt it to the modern commodity market.

The scope of the area within this research, "Study on the Traditional Craftsmanship of She Inkstones from the Qing Dynasties for Application in Product Design," is centered around the confluence of traditional craftsmanship and modern product design. Specifically, the study focuses on the geographical, cultural, and temporal boundaries that define the area of investigation. It examines the historical roots of She inkstone craftsmanship in the Qing dynasties, with a particular emphasis on the region from which this art form originated. The research area includes the examination of both the practical and symbolic aspects of She inkstones, as well as the exploration of how these elements can be translated into modern product design. By delineating this specific area of focus, the research aims to provide a targeted and in-depth analysis that bridges the gap between historical craft practices and innovative product design.

Local investigations reveal several issues currently affecting the production of She inkstones: Firstly, production is concentrated in areas such as Wuyuan, Huangshan mountains, She County, Qimen, and Jixi in Jiangxi and Anhui provinces. In the early years of the People's Republic of China, there were large local craft factories dedicated to production. With the transition to a market economy, individual artisans and small workshops have proliferated like mushrooms after a rain. In She County alone, there are 148 inkstone factories with over 2,700 employees and an annual output of 6.8

million pieces. (Zhuang, 2011) Overall, the production lacks organization, and the products are numerous but not refined.

Secondly, according to materials provided by the Cultural Department of Huangshan City, She inkstones currently face two main challenges: an extremely difficult supply of inkstone material and a lack of successors (Yu et al, 2012). The former is due to the blind and excessive mining over the years, which has led to the depletion of the stone and the collapse of mountains (Wang et al, 2021). Longwei stone, as a representative of She stone, is being consumed too quickly and lacks proper planning. According to experienced personnel in inkstone production at the She inkstone factory, the value of She inkstones is primarily in the quality of the stone, with the most famous being the Longwei stone found in the ravines below Longwei Mountain in Wuyuan (also known as She stone) (Hu, 2019). However, it is estimated that the reserves of Longwei stone will only last for another five years, and if not properly managed, it could be exhausted in less than five years. Fortunately, the factory still has a considerable stockpile, which can sustain production for another twenty years. Once these She stones are used up, it will be difficult to produce She inkstones made from Longwei stone, and the substitute materials will be hard to match its quality. The latter challenge is due to the fact that inkstone making is a traditional craft that requires a spirit of hard work and endurance (Zu et al, 2019). It also requires a lengthy apprenticeship to master the skills through practice, and it is necessary to have a solid foundation in related cultural knowledge, such as calligraphy, painting and fine arts. Renowned inkstone carvers, for instance, possess a background in these arts.

Thirdly, the target market for sales is mainly tourists, professional calligraphers and painters, and individual or institutional collectors. The sales channels are limited, the product forms are singular, and there has not been sufficient expansion and development. The main market is domestic, and there are no specialized promotion agencies for Southeast Asian countries and other parts of the world where there are large Chinese communities.

In summary, the production of She inkstones faces significant challenges that need to be addressed to ensure the continuation and growth of this traditional craft. The issues of supply, succession, and market development are critical to the future of She inkstones, and efforts must be made to innovate and adapt to modern market conditions while preserving the essence of the traditional art form (Chen et al, 2019).

1.2 Objectives of the Study

1.2.1 Study on the culture craftsmanship of She inkstones from the qing dynasties
She inkstones

1.2.2 Design of contemporary She inkstones

1.2.3 Evaluate the satisfaction of the teenagers towards product design of
contemporary She inkstones.

In the process of reviving traditional She inkstone craftsmanship for modern audiences, it is necessary to measure the satisfaction of young people, who are known for embracing contemporary design and technology. A thorough evaluation of their reactions to the prototype design of the modern She inkstone will provide valuable feedback on the resonance between these designs and young users. This evaluation not only measures aesthetic and functional appeal, but also assesses the emotional connections that these inkstones can cultivate. By understanding the preferences and expectations of teenagers, designers can improve their prototypes to better cater to the tastes of the younger generation, ensuring that the heritage of She Yan is protected and revived in a way that echoes the digital age.

1.3 Research Framework

1.3.1 Historical Context and Cultural Significance

1.3.1.1 Exploration of the historical background of She inkstones in the Qing dynasties

1.3.1.2 Analysis of the cultural and artistic importance of She inkstones in Chinese heritage

1.3.2 Documentation and Analysis of Traditional Craftsmanship

1.3.2.1 Compilation of historical records and documentation on traditional She inkstone craftsmanship

1.3.2.2 Detailed analysis of carving techniques, material selection, and ancient methods used in the production of She inkstones

1.3.3 Identification of Design Elements and Aesthetic Principles

1.3.3.1 Identification of key design elements and aesthetic principles that define the traditional craftsmanship of She inkstones

1.3.3.2 Examination of how these elements and principles can be incorporated into modern product design

1.3.4 Contemporary Design Approaches and Materials

1.3.4.1 Study of contemporary design trends and their potential application in the creation of modern She inkstones

1.3.4.2 Exploration of new materials and technologies that can enhance the functionality and aesthetic appeal of the inkstones

1.3.5 Teenagers' Preferences and Satisfaction Evaluation

1.3.5.1 Assessment of teenagers' preferences and expectations regarding product design, with a focus on aesthetic and functional aspects

1.3.5.2 Evaluation of the satisfaction of teenagers towards the prototype design of modern era She inkstones

1.3.6 Integration of Traditional Craftsmanship in Modern Design

1.3.6.1 Development of a framework for integrating traditional craftsmanship techniques with modern design approaches

1.3.6.2 Application of this framework to create product designs that respect the heritage of She inkstones while appealing to contemporary tastes

1.3.7 Case Studies and Design Implementation

1.3.7.1 Analysis of case studies where traditional craftsmanship has been successfully applied to modern product design

1.3.7.2 Implementation of the research findings in the design and development of a new range of She inkstones for the modern era

1.3.8 Conclusion and Future Directions

1.3.8.1 Synthesis of research findings and their implications for the preservation and revitalization of traditional She inkstone craftsmanship

1.3.8.2 Discussion of future research directions and the potential impact of this study on the broader field of product design and cultural heritage preservation

1.3.9 Research Methods

1.3.9.1 Literature Review

Collect and read historical documents, technical information, and research findings related to She inkstones. Gain a comprehensive understanding of the development, craftsmanship characteristics, and historical cultural value of She inkstones.

1.3.9.2 Field Research

Visit museums, inkstone origins, and craftsmanship heritage sites for on-site inspections. Observe physical objects, collect primary data, and communicate with artisans to understand the specific operational processes of traditional craftsmanship.

1.3.9.3 Craft Analysis

Analyze the She inkstones collected, including their material, carving techniques, shape design, and flat area treatment. Extract the essence of traditional craftsmanship.

1.3.9.4 Design Theory Learning

Study relevant theories of modern product design, including user experience, ergonomics, and design psychology, to provide theoretical support for innovative design.

1.3.9.5 Market Research

Use methods such as questionnaires, user interviews, and market data analysis to understand consumer needs and preferences, providing market-oriented for design.

1.3.9.6 Case Analysis

Study successful cases where traditional craftsmanship is combined with modern

design, learning from experiences and lessons to provide references for the innovative design of She inkstones.

1.3.10 Research Process

1.3.10.1 Project Initiation

Establish research objectives, define the scope and content of the research, and prepare for the initial stage.

1.3.10.2 Data Collection

Collect relevant information through literature research and field research to gain a full understanding of the traditional craftsmanship of She inkstones during the Qing and Qing dynasties.

1.3.10.3 Craft Extraction

Analyze traditional craftsmanship and extract valuable elements such as the texture of inkstone materials and carving techniques.

1.3.10.4 Market Research

Understand current market trends and consumer demands to determine the design direction and target user groups.

1.3.10.5 Design Development

Based on the characteristics of traditional craftsmanship and modern design concepts, carry out product design, including material selection, functional design, and aesthetic design.

1.3.10.6 Prototype Creation

Make design prototypes for practical operations, testing the feasibility and practicality of the design.

1.3.10.7 User Testing

Invite target user groups to test product prototypes, collect feedback, and optimize the design.

1.3.10.8 Evaluation and Improvement

Assess the market potential and user satisfaction of the product, and make necessary improvements to the design.

1.3.10.9 Results Presentation

Display research results through exhibitions, conferences, or published papers to promote the innovative She inkstone products.

1.3.10.10 Continuous Iteration

Make continuous improvements and iterations to the product based on market feedback and user experiences, maintaining its market competitiveness and cultural value.

By following the above research methods and processes, one can effectively apply the traditional craftsmanship of She inkstones from the Qing and Qing dynasties to modern product design, while meeting the needs of contemporary consumers and promoting the inheritance and development of traditional culture.

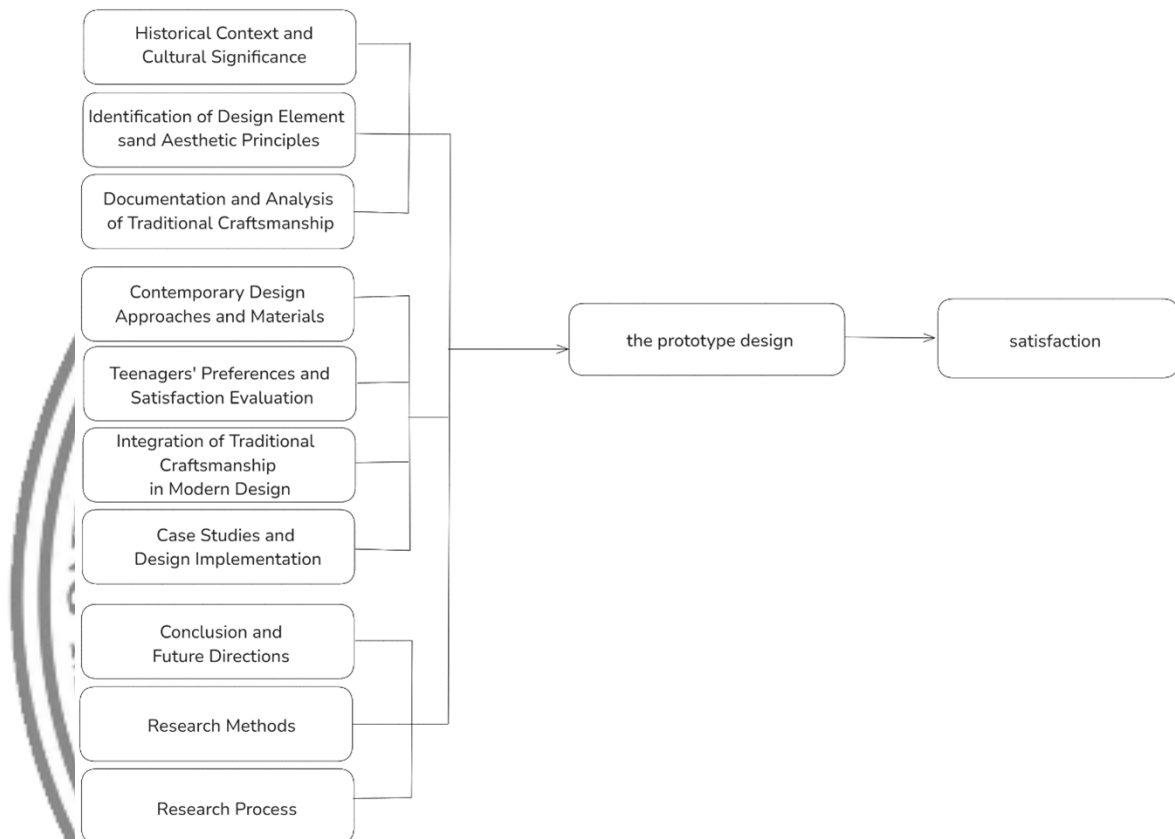


Figure 1.1
frame diagram
(Picture source: by the author)

1.4 Scope of Research

1.4.1 Scope of the Contents

This study, entitled "Study on the Traditional Craftsmanship of She Inkstones from the Qing Dynasties for Application in Product Design," delves into the scope of contents that encompass the examination and application of the traditional craftsmanship of She inkstones in modern product design. The scope of this research includes a comprehensive analysis of the historical context and cultural significance of She inkstones, identifying the key techniques and materials that define their traditional craftsmanship. It further explores the integration of these traditional elements into modern design practices, considering both aesthetic principles and functional requirements. Additionally, the study assesses the preferences and satisfaction of

teenagers towards the prototype design of modern era She inkstones, highlighting the importance of catering to the tastes and expectations of younger generations. The scope also extends to case studies and the practical implementation of the research findings, aiming to showcase the successful fusion of traditional craftsmanship and modern design in creating new product ranges. Ultimately, this research aims to contribute to the broader field of product design by providing insights into the application and preservation of traditional craftsmanship within contemporary design contexts.

For over a thousand years, the theoretical community has been home to numerous scholars and experts who have conducted specialized research on She inkstones. Historical records indicate that there are more than seventy types of literature documenting inkstones, which have left a vast amount of literature for future generations. Notable works include Liu Gongquan's "On Inkstones," Ouyang Xiu's "Inkstone Compendium," Gao Fangweng's "Inkstone Critiques," Mi Fu's "Inkstone History," Su Dongpo's "Inkstone Critiques," Su Yijian's "The Four Treasures of the Study," and Heng Quan's "Illustrated Discourse on the Four Treasures of the Study," among others. In modern art theory, there has also been significant research on She inkstones. Hu Zhongtai, a native of Wuyuan, Jiangxi Province, is a master of industrial arts at the provincial level who has been engaged in inkstone research for twenty years. He has made considerable contributions in the fields of inkstone treatment, calligraphy, and inkstone research, and has authored and published five academic monographs, including "Appreciation of Chinese Famous Inkstones," "Longwei Inkstone," and "Identification and Appreciation of She Inkstones." (Ke, 2013) The inkstones introduced in his books are mostly ancient pieces meticulously collected by inkstone collectors from various places, with the majority of works being published for the first time, possessing both high appreciation and academic value. Li Temin's "Inkstone Carving Art and Production" elaborates in detail on the traditional craft of inkstone carving. Yu Feipeng, a master of industrial arts from Sichuan, offers a systematic introduction to the knowledge of inkstones in his "On Inkstones," covering aspects such as identification, carving, and collection. There is also a plethora of books and collections on the Four Treasures of the Study, within which one can find displays and analyses of She inkstones (Zhang, 2012). The She Inkstone Research Institute was established in Wuyuan, Jiangxi Province, in 2000, playing a positive role in the development and enhancement of She inkstones.

Additionally, there are active folk artists of She inkstone carving who exhibit and pass on the art of inkstones through physical objects. Representatives of the young generation include Hu Miao, Zhang Shuo, and Pan Xiaomeng (female). The Hui School of Brick Carving is represented by Hu Hechun. The modern abstract school is represented by Fang Jianchen. The traditional literati school includes Hu Zhenlong, Hu Di, and Hu Qie. A survey of these art pieces and related literature mostly comments on and exhibits the craft methods of inkstone carving and their collection value (Wang,

2018). However, there is relatively little research from the perspective of modern design, and they are not considered as products in terms of material selection, design, and market, with corresponding design development and market expansion.

Overseas, the market for inkstones is primarily found in Southeast Asian countries. Apart from China, countries such as Japan, South Korea, and Vietnam also produce and manufacture inkstones (Chen, 2018). Japanese inkstones are known as "Washi." Initially, Japanese inkstones were primarily produced in China, with the Nara and Heian periods relying heavily on Chinese ceramic inkstones. By the mid-Heian period, Japan began to produce its own inkstones, and now there are nearly a dozen varieties. Among them, the Rain and Mist inkstone from Yamanashi Prefecture in Japan is a well-known and influential type. There has been active exchange and interaction between China and Japan in this field, as evidenced in Hu Zhongtai's "Collection of Sino-Japanese Communication Inkstones." (Zhang, 2012)

1.4.2 Scope of the Area

1.4.2.1 Research area: Huicheng Town, She County, Mount Huangshan City, Anhui Province

1.4.2.1.1 Geographic location and historical background

Hui Town, She County, Mount Huangshan City, Anhui Province, located in the south of Anhui Province, China, is one of the birthplaces of Hui culture. Shexian has been a famous cultural city in China since ancient times, especially during the Qing dynasties when the influence of Huizhou merchants and Huizhou culture reached its peak. As the core area of Shexian County, Huicheng Town carries rich historical and cultural heritage, including traditional handicraft production techniques.

1.4.2.1.2 Traditional craftsmanship of Sheyan

She inkstone is one of the four famous inkstones in China, known for its delicate texture, warm color, and ink like texture. The production technique of Sheyan reached its peak during the Qing dynasties, becoming a cherished possession of literati and ink artists. The production process of Sheyan is complex, involving multiple steps such as material selection, carving, and polishing, each of which requires exquisite skills and rich experience.

1.4.2.2 Reasons for choosing Huicheng Town in Shexian County

1.4.2.2.1 Historical and cultural accumulation

As the birthplace of Huizhou culture, Huicheng Town in Shexian County has a profound historical and cultural heritage. During the Qing dynasties, the prosperity of Huizhou merchants and Huizhou culture provided abundant resources and market demand for the production of Sheyan. Studying the traditional crafts of this region can better understand the historical evolution and cultural connotations of Sheyan.

1.4.2.2.2 Inheritance of traditional crafts

Huicheng Town in Shexian still retains the traditional Sheyan making techniques,

which have been passed down from generation to generation by many artisan families, accumulating rich experience and skills. By studying these traditional crafts, valuable inspiration and technical references can be provided for modern product design.

1.4.2.2.3 Regional characteristics and uniqueness

The production techniques of Sheyan have distinct regional characteristics and uniqueness. The geographical environment and natural resources of Shexian provide high-quality raw materials for the production of Sheyan, such as Sheshi. Studying the traditional crafts of this region can better understand the relationship between materials and crafts, and provide new ideas for modern product design.

1.4.2.2.4 Integration of Culture and Economy

Huicheng Town in Shexian County is not only a treasure trove of traditional culture, but also an important area for modern economic development. By applying traditional craftsmanship to modern product design, it can promote the combination of cultural inheritance and economic development, and enhance the competitiveness of regional economy.

conclusion

Huicheng Town, Shexian County, Mount Huangshan City, Anhui Province was selected as the research area, not only because of its profound historical and cultural accumulation and inheritance of traditional crafts, but also because of its unique regional characteristics and rich natural resources. Through the study of traditional crafts in this region, valuable inspiration and technical references can be provided for modern product design, promoting the combination of cultural inheritance and economic development.

1.4.3 Scope of the Population

The scope of the population for this research, titled "Study on the Traditional Craftsmanship of She Inkstones from the Qing Dynasties for Application in Product Design," is specifically tailored to include key stakeholders in the fields of traditional craftsmanship and modern product design. This population encompasses a diverse group consisting of skilled artisans who possess expertise in the traditional methods of crafting She inkstones, contemporary designers who are interested in incorporating traditional elements into their work, and young individuals, particularly teenagers, who represent the future consumers and potential inheritors of this cultural heritage.

1.4.3.1 Scope of study on the culture craftsmanship of She inkstones from the qing dynasties She inkstones

Scope of study on the traditional craftsmanship of She inkstones from the qing dynasties She inkstones the researcher defined the informants as follows:

1. Museum experts, 3 persons (purposive sampling).
2. Three She Inkstone Design Craftsmen 3 persons (purposive sampling).

1.4.3.2 Scope of to design of contemporary She inkstones

To determine the qualified personnel for the evaluation of She inkstone design, the researchers employed university carving professors 3 persons (purposive sampling).

1.4.3.3 Scope of to evaluate the satisfaction of the teenagers towards product design of contemporary She inkstones.

Population and sample for to evaluate the satisfaction of the teenagers towards the prototype design of the modern era She inkstones.

Population: A total of 14,216 young people aged 18-24 in Huizhou Town, She County, Huangshan City, Anhui Province, China (according to the seventh national population census in 2020).

The sample includes 99 young people aged 18-24 living in Huizhou Town, Huangshan City, Anhui Province, China (Yamane, 1973: 886).

1.5 Expected Benefits

1.5.1 Research Benefits

The research significance of "Studying the Traditional Craftsmanship of She Inkstones during the Qing and Qing Dynasties and Applying It to Product Design" can be summarized in two aspects: theoretical significance and practical significance.

1.5.1.1 Theoretical Benefits

1.5.1.1.1 Deepening of Cultural Heritage Theory:

This study enriches the theoretical system of cultural heritage preservation by providing a case study on how to integrate traditional culture with modern design. It offers a theoretical foundation and research methodology for future studies.

1.5.1.1.2 Innovation in Design Theory:

Introducing traditional craftsmanship into modern product design expands the boundaries of modern design theory. It injects new cultural elements and artistic forms into the design field, promoting the diversified development of design theory.

1.5.1.1.3 Exploration of Aesthetic Theory:

Through the study of She inkstone craftsmanship, the research explores the application of traditional aesthetics in modern product design, providing a new perspective and thought for the development of aesthetic theory.

1.5.1.2 Practical Benefits

1.5.1.2.1 Revitalization of Cultural Heritage:

This study accelerates the transformation of cultural heritage from static preservation to dynamic inheritance. By incorporating traditional craftsmanship into product design, it gives new life to traditional culture and enhances society's understanding and respect for cultural heritage.

1.5.1.2.2 Promotion of Industrial Development:

Applying traditional craftsmanship to product design promotes the development of traditional craft industries, providing new momentum for local economic growth and fostering the prosperity of the cultural creative industry.

1.5.1.2.3 Effective Market Demand Fulfillment:

Products that integrate traditional craftsmanship with modern design better meet the needs of modern consumers. They satisfy the market's pursuit of cultural depth and artistic value, enhancing the market competitiveness of products.

1.5.1.2.4 Education and Popularization:

Such research has a positive impact on public education, helping to improve the public's understanding and appreciation of traditional Chinese crafts and promoting the enhancement of cultural literacy.

1.5.1.2.5 International Cultural Exchange:

By introducing traditional craftsmanship to the international market through product design, this study helps to enhance the international influence of Chinese culture, strengthen cultural confidence, and promote the international exchange and dissemination of Chinese culture.

In summary, the research has significant theoretical and practical implications. It enriches academic achievements and provides practical contributions to social, economic, and cultural development.

1.5.2 Innovation Benefits

The innovation of this project lies in the systematic summary and research on the craftsmanship characteristics of She inkstones. Based on this, the project aims at modern design concepts and market-oriented development. Through analyzing the consumption value factors of the target consumer group, and with the three essential elements of modern product design as the carriers - material, function, and appearance, the project develops and designs She inkstones to make them more suitable for the modern market.

Expanding on this, the research not only preserves the traditional essence of She inkstones but also adapts them to contemporary tastes and demands. By integrating modern design principles with traditional craftsmanship, the project creates a fusion that resonates with consumers in search of both cultural significance and practical utility. The material aspect of the design considers the use of modern materials while maintaining the traditional feel, the functional aspect emphasizes usability and practicality in line with modern lifestyles, and the aesthetic aspect introduces contemporary design elements that appeal to the aesthetic preferences of the target market. This approach ensures that the redesigned She inkstones are not only culturally significant but also competitive in the market, appealing to a broad consumer base and contributing to the sustainable development of traditional craft industries.

1.6 Definition of Term

1.6.1 Inkstone:

Also known as inkstone or inkstone tile, an inkstone is a general term for inkstones made of various materials such as stone, porcelain, tile, pottery, and other different textures.

1.6.2 Inkwell:

The deepest part of an inkstone used to hold water and store ink. The well is a significant feature of the inkstone, occupying a prominent position and serving as one of the most important components of the inkstone. It is often compared to the eyes of a person, also known as the water well or ink well.

1.6.3 Inkstone Flat:

Also known as the plane or abrasive surface. The smooth and polished surface of the inkstone, much like a person's face. The inkstone flat is where water is used to grind the ink, reflecting the practical function of the inkstone.

1.6.4 Inkstone Edge:

Also known as the border, edge, or lip of the inkstone. The inkstone edge is located at the inner rim of the inkstone. Its functions include retaining water, preventing ink from spilling during use, and helping to align the brush.

1.6.5 Inkstone forehead:

The forehead of the inkstone. The inkstone forehead is usually located at the top of the inkwell but may also be found on the sides.

1.6.6 Inkstone Surface:

Also referred to as the inkstone face. It refers to the entire front of the inkstone.

1.6.7 Inkstone Side:

The side of the inkstone, also known as the edge.

1.6.8 Inkstone Back:

The opposite side of the inkstone face.

1.6.9 Double Handle:

A flat and round recess on the back of the inkstone, often used for carving characters and patterns.

1.6.10 Shape of the Inkstone:

A certain shape and style of the inkstone that has been passed down and widely accepted by the industry.

1.6.11 Inkstone Pit:

The source of the inkstone material.

1.6.12 Miaoqian Green and Miaoqian Red:
Special varieties of inkstone.

1.6.13 Opening the Inkstone:

The process of using sandpaper and water to rub the inkstone surface when it is new, to remove the greasy layer and make it easier to use.

1.6.14 Shezhou:

geographically, ancient Shezhou (also known as ancient Huizhou) is located near the junction of Anhui, Zhejiang, and Jiangxi provinces, close to the side of Anhui. It was established as a county during the Qin Dynasty and as a prefecture during the Tang Dynasty, known as Shezhou.

1.6.15 Xin'an Neo-Confucianism:

One of the important branches of Zhu Zi's school, mainly spread in the area of Huizhou. It has had a significant influence on the development of Chinese philosophical history and academic thought after the 12th century.



CHAPTER 2

LITERATURE REVIEW

The Qing and Qing dynasties were the golden age of She inkstones art. She inkstones of this period was famous for its exquisite craftsmanship, unique stone quality, and profound cultural connotations. The She inkstones of the Qing and Qing dynasties sought a combination of natural beauty and artificial beauty in artistic terms. The design of the inkstones often featured themes such as mountains, flowers, birds, and figures, brimQing with poetry and romanticism. The carvings were intricate, with smooth lines and a strong sense of stereoscopic motion. Moreover, the decoration of the inkstones was also meticulous, often adorned with gold, silver, jade, and other materials, making She both practical and aesthetically pleasing.

2.1 The Origin of She inkstones Art

2.1.1 Overview of Inkstone

2.1.2 Characteristics and History of She inkstones

2.2 The cultural background of She inkstones

2.2.1 The Natural and Cultural Context of She Inkstones

2.2.2 The Humanistic Cultural Background of She Inkstones

2.3 A Comprehensive Review of She Carving Art in the Qing and Qing Dynasties

2.3.1 The historical background of the development of She inkstone carving art in the Qing Dynasty

2.3.2 The source situation of She stone in the Qing Dynasty

2.3.3 Interpretation of the Typical Forms of She Inkstones in the Qing Dynasty

2.3.4 The artistic characteristics of Qing Dynasty She inkstone carving

2.3.5 The artistic ideas reflected in the carving of Qing Dynasty She inkstones

2.1 The Origin of She inkst

2.1.1 Overview of Inkstone

The traditional Chinese four treasures of the study carry profound cultural heritage, primarily consisting of the brush, ink, paper, and inkstone. The inkstone, also known as the ink-slab or grinding plate, serves as a crucial tool for grinding ink or other pigments, used for writing and painting. Su Yijian, a scholar from the Song Dynasty, wrote in "The Four Treasures of the Study" (Yu, 2010): "The inkstone is for grinding; it can rub the ink to make it smooth and pliable." The creation of the inkstone arises from the need for use, becoQing the companion of scholars and literati throughout the ages. They compare the inkstone pool to farmland, regarding the pursuit of literature as their livelihood, with the saying "making literature the occupation and the inkstone the field" in the scholarly circles (Pei, 2000). Made predominantly of stone and adorned with exquisite carvings by artisans, the inkstone possesses a high aesthetic value, preserving the most exquisite pieces among the four treasures, hence the reputation of being the crown jewel of the study.

Within an inkstone, the viewer can appreciate the warmth of the stone's texture, the intricacy of the stone's grain, the sophistication of the carving's creativity and the skillful handling of the patterns, as well as the delicate craftsmanship of decorative themes that encapsulate cultural and historical value (Hu, 2010). Over time, the inkstone, with its long history, has evolved into an art form that combines utility with

appreciation, earning an illustrious reputation internationally (Chen, 2019). It has been presented multiple times as a state gift by Chinese leaders, undoubtedly serving as a carrier, a deposit, and a microcosm of traditional Chinese culture.

The inkstone is popular not only in areas around the world where Chinese communities reside but also in Southeast Asian countries and regions deeply influenced by brush and ink culture. Countries such as Japan, Korea, and Vietnam also have their own production and craftsmanship of inkstones (Yu, 2005). Due to the introduction of Chinese characters to Japan during the Southern and Northern Dynasties of China, the culture of inkstones was also passed down and spread around that time. By the Tang Dynasty in China, which corresponds to the Nara period in Japan, the cultural exchange between the two countries was frequent, leading to a more comprehensive transmission of inkstone culture.

After World War II, Japan conducted archaeological excavations at various ancient sites, uncovering numerous ancient inkstones, which further authenticated their history. During the Nara period, the "Wind Character" inkstones were common (as shown in Figure 2.1), while during the Heian period, the "Monkey Face" inkstones were prevalent (as shown in Figure 2.2). Before this, Japanese inkstones were mainly made of pottery, primarily imitating forms. It was in the late Heian period that stone inkstones became widespread. Since the Taisho era, which corresponds to the Republic of China period, the popularity of calligraphy led to the establishment of the custom of collecting and appreciating ancient inkstones.

Japan has a vast stone-producing region with over thirty varieties. The characteristics of their craftsmanship can be summarized as having a simple and sleek design, with smooth lines and minimal decoration. The Japanese approach to inkstone creation emphasizes functionality and aesthetic minimalism, reflecting a cultural preference for understated elegance and practicality (Wang et al, 2014). This artistic style has been embraced and preserved over the centuries, making Japanese inkstones unique and valued contributions to the world of calligraphy and art.



Figure 2 1

Fengzi Inkstone

(picture source: the Palace Museum, China), 2024



Figure 2 2
Monkey face inkstone
 (picture source: Guangdong museum, China), 2024

The origins of inkstones in our country are shrouded in antiquity, with no definitive conclusion on when they first appeared. According to relevant texts, the earliest inkstones in China are thought to have evolved from stone grinding tools that dates back to approximately 8,000 to 5,000 years ago. These grinding tools are considered the precursors of inkstones, marking the inception of their craft.

The confirmed presence of inkstones can be traced to the late Warring States period, with a gradual evolution into a stable, flat, and circular shape during the Han Dynasty. Before the Han Dynasty, grinding tools typically consisted of a grinding plate and a pestle (or grinding stone), where the pestle was used to press and grind pigments and ink cakes on the plate (Zong, 2007). The Han Dynasty marked a pivotal point in the evolution of inkstones, as the introduction of artificial ink allowed for direct hand grinding, eliminating the need for separate grinding tools. During this period, inkstone surfaces started to feature distinct functional areas, including the ink well for grinding and the ink pool for storing ink and water. It was also in this era that inkstones began to receive decorative carvings, adding an aesthetic dimension to their functionality.

The Eastern Han to the Southern and Northern Dynasties witnessed the appearance of three-legged and multi-legged ceramic inkstones, as well as the winnowingbasket-shaped earthenware inkstones. The Tang Dynasty was a significant phase in the development of inkstones, characterized by the use of specialized stone materials. This era saw the emergence of the prototypes for the modern four renowned inkstones: the Duan, She, Liaohe, and Chengni inkstones. The "Wind Character" inkstone was a prominent form of the time, named for its similarity to the Chinese character for "wind."

In the Song Dynasty, the "rectangular copying hand" inkstone became the primary form (as shown in Figure 2.3). This period saw the documentation of inkstone shapes, styles, and carving techniques in specialized theoretical works, including Ouyang Xiu's "Inkstone Spectrum", Cai Xiang's "Inkstone Notes," Mi Fu's "Inkstone History," Tang Xun's "Inkstone Spring," and Gao Yisun's "Inkstone Treatise." (Ren et al., 2000)

During the Yuan Dynasty, the rectangular copying hand inkstone and the cicada-shaped inkstone were common (as shown in Figure 2.4). The Ming and Qing dynasties saw the rise of inkstones crafted specifically for display and collection, with a strong trend towards artistic expression. Many renowned carvers emerged, and inkstones became more diverse in shape, with themes ranging from flowers and birds to landscapes and figures, showcasing a variety of carving techniques.

Today, the inkstones we encounter are mainly divided into two types: simple and decorative. Simple inkstones are characterized by their flat, orderly shapes, typically square or round, devoid of decoration, and focused on practical use. (Bai, 2011) Decorative inkstones, however, are created for both use and appreciation, often collected for their artistic value. They boast unique shapes and profound artistic conception, designed to provoke thought and admiration.

In contemporary times, inkstones have become less familiar and are used less frequently. Their value has transcended mere utility, with their aesthetic, cultural, collectible, and economic worth now being recognized as far exceeding their original objectives. Inkstones have shifted from being a tool to an object of art and historical significance, reflecting a deeper appreciation of their intricacies and the cultural heritage they represent. (Chen, 2018) As artifacts that bridge the past with the present, inkstones continue to be a symbol of traditional Chinese culture, admired for their beauty, craftsmanship, and the stories they tell. (Shao, 2018) Whether as a practical tool for calligraphy or as a piece of art for collection, the inkstone holds a unique place in the hearts of many, connecting them to a rich tapestry of history and artistic expression.

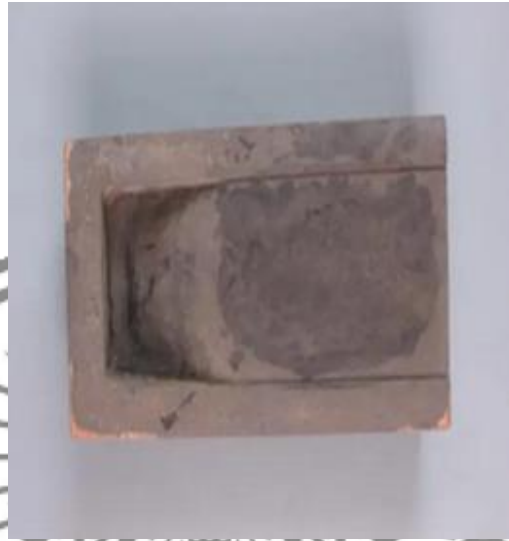


Figure 2 3
Rectangular hand copying
 (picture source: Zhejiang Provincial Museum, China), 2024



Figure 2 4
Cicada shaped inkstone
 (picture source: Anhui Museum, China), 2024

The She inkstone, which is the focus of this study, is one of the four famous inkstones. For a comparative feature, here is a brief introduction to the other three major inkstones: the Chengni inkstone, the Liaohe inkstone, and the Duan inkstone. (Chen, 2019) The Chengni inkstone (as shown in Figure 2.5) is produced in Shanxi, Henan, and Shandong provinces. It is the only one among the four famous inkstones that is not made of stone but rather is a ceramic product. Its most distinctive feature is its high plasticity, due to its clay material. The main famous products include Wax Fish Yellow, Crab Shell Green, Rose Purple, Mung Bean Sand, and Douban sand (a type of sand).



Figure 2.5
chengni inkstone
(picture source: Anhui Museum, China), 2024

The Liaohe inkstone (as shown in Figure 2.6), also known as the Liaohe Green Stone inkstone, is mainly produced in the Laojian village of Zhenyi County, Gansu Province. The stone has a moderate hardness, with colors mainly of jade green, crimson purple, and deep red, with the blue-green being the most superior. The carving style is characterized by hollowing out (openwork) and deep carving.

The Duan inkstone (as shown in Figure 2.7) comes from Zhaoqing, Guangdong. The color is predominantly purple, with sky blue being the most precious, followed by green, brown, and liver color. (Zhu, 2021) The stone patterns are numerous, with the carving style mainly consisting of deep relief. It is currently the inkstone variety with the strongest traditional flavor in the country. Its styles and decorations often follow the commonly used forms from ancient times, such as the wind shape, four straight sides, melon shape, cicada shape, guitar shape, and fish shape. The style is rigorous and full of a courtly artisanal spirit.

In contrast, the She inkstone's most distinctive feature is its scholarly elegance, which is immediately recognizable from its appearance, and its carving style, which is influenced by the Qingya and Xieyi (plain and freehand) aesthetics of the Xin'an School of Painting. The She inkstone stands out for its literary and artistic temperament, offering a clear departure from the formal and courtly style of the Duan inkstone.



Figure 2.6
Taohe Inkstone
 (picture source: Hangzhou Museum, China), 2024



Figure 2.7
Duan Inkstone
 (picture source: China Duan Yan Museum, China), 2024

2.1.2 Characteristics and History of She inkstones

During the Tang Dynasty, the She Prefecture included She County, Xiuning, Qimen, Wuyuan, Yixian, and Jixi. The pits for She stone, used in making inkstones, were mainly distributed in Longwei Mountain in Wuyuan, Jiangxi, and the areas around Xiuning, Qimen, and She County in Anhui. Therefore, the inkstones made from this

stone are known as She inkstones. (Sang, 1994) Due to the geographical location of the ancient She Prefecture and the rise of the Huizhou merchant culture during the Qing and Qing dynasties, which emerged in the civilized world, it became a concentrated embodiment of Huizhou culture on the level of cultural geography, and thus was also called Ancient Huizhou.

Influenced by Huizhou culture, She inkstones in their artistic style and carving techniques are deeply influenced by the Xin'an School of Painting and the Huizhou School of Sculpture. The typical local characteristics of She inkstones make them one of the representatives of Huizhou culture.

The characteristics of She inkstones (as shown in Figure 2.8) are mainly reflected in two aspects: the material and the carving decoration. When the stone material is hollowed out and tapped with a finger, it emits a metallic sound, and the touch of the stone surface gives a feeling of "warm and smooth as jade." The quality of the stone is determined by its formation and composition (specifically analyzed and described in the section on She inkstone material in Chapter 2), (Mu, 1983) which naturally has the benefits of fine ink grinding, not consuming ink, and not damaging the brush, making it unique in terms of stone quality. The She stone typically presents a gray color, which darkens to a bluish-black after fine polishing, which is a characteristic of its stone color. (Huang, 1999) The stone's texture is exquisite and rich, with representative patterns including eyebrow patterns, Venus (starry patterns), golden halos, fish roe, and basket patterns, which are the characteristics of its stone texture.

In terms of carving decoration, She inkstones often express a lyrical and freehand style, emphasizing the charm of the lines and knife work, predominantly using bas-relief and line carving techniques. The design combines with nature, emphasizing the natural half-exhausted (semi-transparent) color of the stone in the shape, texture, and natural patterns of the inkstone, with a refined and elegant approach to knife work.

Similar to the woodblock prints in Huizhou school bookbinding, or the stone and brick carvings in Huizhou architecture, Huizhou school inkstone carving is also a unique art form. It is one of the three major schools of inkstone carving in China, along with the Guangdong school, the Huizhou school, and the Suzhou school.

The She Inkstone has a history of more than 1300 years. There is a record in the "Shezhou Inkstone Collection" written by Song people about the discovery of She stone and its use in making inkstones, which is currently the earliest record about She inkstones. (Hu, 2007) Li Yu, the last emperor of the Southern Tang Dynasty, was good at literature and calligraphy, and he sent people to places like Longwei Mountain to mine inkstone stone, making She inkstones a tribute to the court. This is recorded in the "Inkstone Collection" by Li Zhiyan. During the Song Dynasty, the exploitation of She inkstones was on a large scale. At that time, the governor of Huizhou placed the Chunxin Hall paper, Li Yanju ink, Wang Boli brush, and She inkstone as tributes to be

presented to the court annually. This can be verified in contemporary literature, such as Huang Tingjian's "An Ode to the Inkstone" (Zhang, 2007). During the Yuan and Qing dynasties, due to various reasons such as chaos, there were fewer records of the exploitation and production of She inkstones. It was not until the Qianlong reign of the Qing Dynasty that it was revitalized. Xu Yi's "She Inkstone Examination" records that Qianlong "governed the world with culture and civilization", "the ministers followed the emperor's wishes and purchased fine inkstones to support the literary room". In the Daoguang years, She inkstones became a regular tribute to the court, as recorded in "She Zhi". From around 1910 to liberation, the exploitation and production of She inkstones only existed in name. (Bao, 2005) In 1963, relevant departments, with the support of the government, sent specialists to survey and mine the She inkstone pits again. In 1979, the She Inkstone Exhibition was held at the China History Museum in Beijing, and She inkstones began to be exported to Southeast Asia. Since the 1980s, relevant departments in the She inkstone producing areas have established manufacturing factories. With the development of the market economy, private units engaged in She inkstone production have sprung up like mushrooms after the rain, becoming a trend in the inkstone industry, injecting new vitality into the economy.



Figure 2 8

She inkstones

(picture source: Huizhou Museum, China), 2024

2.2 The cultural background of She inkstones

2.2.1 The Natural and Cultural Context of She Inkstones

She inkstones contain a profound cultural heritage, due to their long history and rich artistic atmosphere, they are products with historical value and local

characteristics. (Tang, 1991) On May 20, 2006, this craft was approved by the State Council and included in the first batch of national-level intangible cultural heritage lists. Their style and characteristics are deeply influenced by local culture, the human environment, and the constraints of the natural environment. After analyzing the modern She inkstone production and market conditions, this article attempts to propose some improvement ideas and design and development cases from the perspective of product design. These improvements and design developments must preserve the original characteristics of the product and enhance its traditional value, allowing it to better integrate with the modern market. (Mu et al, 1983) The inherent characteristics and traditional value of a product are influenced by many factors, including historical traditions, economic and technological constraints, consumer preferences, the impact of natural and human environments. Especially for products with local characteristics like She inkstones, their inherent characteristics, which can be said to be the essence of the product's personality, cannot be separated from the natural and human cultural background that nurtures them. In order to better preserve the individual characteristics and traditional value of the original product in the subsequent product design and development process, an investigation and analysis of the natural and human cultural background of its place of origin is conducted here.

The production area of She inkstones is determined by the concentration of raw material development and production. As mentioned earlier, the ancient Shezhou (also known as ancient Huizhou) is located near the current Anhui province side of the junction between Anhui, Zhejiang, and Jiangxi provinces. In the Qin Dynasty, a county was established here, and in the Tang Dynasty, a state was set up, known as Shezhou. Geographically, this includes She, Xiuning, Qimen, Huangshan City, Yixian, and JiXi counties in Anhui, as well as Wuyuan City in southern Anhui, near the border with Jiangxi province. (Hu, 2015) This region is characterized by picturesque mountains and rivers, rolling hills, narrow and steep terrain, and high mountains with long rivers.

The stone used for She inkstones is sourced from the beautiful areas around Huangshan and Tianruxi in She, Xiuning, Yixian, Qimen, and Wuyuan (formerly known as Shezhou, located in present-day Anhui and Jiangxi provinces). This area was part of the ocean about 1.3 billion years ago. Through the Jinning orogenic movement 800 million years ago, some areas rose to become land. After numerous climatic changes, orogenic movements, volcanic eruptions, fluvial deposits, and erosion by rain and rivers, the unique characteristics of She stones were formed.

She stones are a type of metamorphic rock, formed from the transformation of igneous and sedimentary rocks under high pressure and high temperature. Modern geologists have determined that She stones are primarily composed of muscovite, serpentine, quartz, metallic minerals, and carbonaceous materials, with particles generally ranging from 0.001 to 0.01 cm in size, and an average hardness of around 4 on the Mohs scale of hardness, with a specific gravity of approximately 3.2. These

properties make the stone an ideal material for inkstone production. If the particle size of the stone is too coarse, the resulting ink will be too rough (damaging the brush), but if the stone is too fine, the surface will be too smooth and unable to hold ink. She stones are characterized by appearing smooth but actually hiding sharp edges, and the ink produced is dense and smooth, making it highly favored by scholars and calligraphers.

She stones have attractive natural patterns, including halo, golden flower, asterism, silver halo, silver star, and other patterns such as zigzag, angular waves, ripples, brush hair, jade belt, and fish eggs. The gold and silver colors are due to sulfur-containing substances like limonite and magnetite, while the layered patterns are often ancient sediments that have been transformed under high pressure and geothermal effects.

2.2.2 The Humanistic Cultural Background of She Inkstones

She inkstones, located in the cultural region of Huizhou, are deeply influenced by Huizhou culture. Huizhou culture has a long history, traceable back to the Shang and Zhou dynasties. Over thousands of years, it has evolved through stages including ancient culture, Shanyue culture, and Xin'an culture. The term "Huizhou culture" today primarily refers to the regional culture of Huizhou that flourished since the Southern Song Dynasty, through the Yuan, Ming, and Qing dynasties.

Huizhou culture encompasses a wide range of aspects, including the land system of Huizhou, Huizhou merchants (Hui merchants), Huizhou clans, famous historical figures of Huizhou, education in Huizhou, scientific and technological achievements in Huizhou, Xin'an Confucianism, Xin'an medicine, Huizhou opera, the Xin'an school of painting, Huizhou seal carving, Huizhou woodblock printing, craftsmanship in Huizhou, Huizhou book printing, Huizhou documents, historical archives of Huizhou, Huizhou architecture, Huizhou villages, Huizhou folk customs, Huizhou dialect, and Huizhou cuisine. Huizhou culture, like Dunhuang studies and Tibetan studies, has become one of the three major regional cultural studies of China that attracts attention from both domestic and international academic circles.

Wuyuan in Jiangxi is one of the main origins of She inkstones. Although it is not part of Anhui province on today's map, it is an integral part of Huizhou culture. Wuyuan was under the jurisdiction of Shezhou during the Tang to the early Five Dynasties, belonged to Xin'an County in the Song Dynasty, was part of the prefecture road of Shezhou in the Yuan Dynasty, and both the Ming and Qing dynasties were under the jurisdiction of the Huizhou prefecture. (Hu, 2003) In 1936, during Chiang Kai-Shek's anti-communist campaign, Wuyuan was transferred from Anhui to Jiangxi. In 1947, Hu Shi and others proposed the Return to Anhui movement, which was returned to Anhui in 1949. Wuyuan was liberated on May 1, 1949, and since then, it has been part of Jiangxi's Fourth Field Army liberation zone and remains part of Jiangxi to this day.

The literary culture of Wuyuan is mainly manifested in aspects such as Huizhou-style architecture, ancestral hall culture, water mouth culture, village culture, Huizhou

merchant culture, Cheng Zhu Confucianism, folk culture, Huizhou cuisine, inkstone culture (also known as She inkstone), historical figures, Huizhou opera, and other aspects.

The influence of the humanistic environment on She inkstones is primarily reflected in the aspect of carving and shaping. The area of Huizhou is famous for its carving, such as woodblock printing, brick carving, and seal carving in Huizhou inkstone grinding. Huizhou inkstone carving is also a unique craft. Carving is a comprehensive art that manifests the unity of form and thematic content. The thematic content expresses the carver's emotions, while the form is achieved through the use of carving as a means of expression to shape the internal structure and external 形态. The greatest feature of She inkstone's form is the combination with the natural stone material, advocating minimal processing, retention of the natural color, mastery of freehand techniques, and emphasis on line usage, with a sense of improvisation, which is also a distinct difference from other schools of inkstone carving. To reach this level, carvers need strong artistic ability, solid painting skills, and a deep understanding of traditional culture. Outstanding She inkstone carvers all have good painting skills, such as the master carver Fang Jianchen, who is revered in the industry as the "Number One Knife in the World" (as shown in Figure 2.9).



Figure 2.9

High mountains and flowing water

(picture source: Huizhou Museum, China), 2024

He is a representative of modern abstract carving and has also made remarkable achievements in the field of painting. He is currently the president of the Yellow Mountain National Painting Academy. His paintings of court ladies are elegant and unrestrained, combining simplicity with refinement, and are filled with a lively charm. Before writing this thesis, the author visited Zheng Han, one of his disciples, a provincial-level craftsman and a contemporary master of She inkstone carving. His works have been used as national gifts many times (as shown in Figure 2.10). When talking about his path of learning, Mr. Zheng Han mentioned that before learning inkstone carving, he had studied under a teacher of the Xin'an school of painting style. This style emerged among a group of late Qing and early Qing scholars in Huizhou who emphasized the temperament of the painter due to their common geographical origin, life beliefs, and painting styles, collectively known as the Xin'an school. The economic prosperity brought by Huizhou merchants provided a good material foundation for the painters. The Huizhou merchants dominated for centuries, and the streets and alleys prospered. The merchants, who were also influential and wealthy, returned home in triumph, building halls, expanding ancestral halls, erecting memorial arches, building bridges, setting up schools, and promoting education to support the development of scholars and Confucians. Moreover, Huizhou is the hometown of the Four Treasures of the Study (writing brush, ink, paper, and inkstone), providing even better material conditions for the painters. The "Purified Heart Hall paper, Huizhou ink, and She inkstone" combined with a rich cultural atmosphere, fostered the rise of cultural schools. Influenced by Cheng Zhu's Neo-Confucianism, which holds that there is a universal standard above reality and society, known as "Heavenly Principle," and that following this principle is the essence of truth, goodness, and beauty, while disregarding it leads to human desires, which destroy these qualities. Thus, he advocated "seeking and following the heavenly principle, and extinguishing human desires," which is the core of Zhu Xi's objective idealism. The Xin'an school's painting style tends to be sparse, desolate, and cool. They delved into the history of painting, widely collected and assimilated various styles, were simple and far-reaching, desolate, sparse, and cool, with a distinct scholarly and refined demeanor. Using this demeanor to interpret the ancient elegance and refined carving style of She inkstone is the best choice.



Figure 2 10
Mount Huangshan Scenic Spot Inkstone
 (picture source: Mount Huangshan Museum, China), 2024

2.3 A Comprehensive Review of She Carving Art in the Qing and Qing Dynasties

As one of the four famous types of Chinese inkstones, She inkstones, according to historical records, began to be collected as early as the Tang Dynasty. Over their thousand-year history, She inkstones have experienced a seesawing fate. During the Tang and Song Dynasties, superior stone materials continuously appeared, and master artisans emerged one after another, causing She inkstones to gain great fame and securely establish their historical status among the four famous types of inkstones. However, due to excessive mining, which led to frequent disasters and eventually the depletion of the stone resources and the collapse of the mountains, the development of She inkstones during the Qing and Qing Dynasties showed a slight decline. But relying on the exquisite craftsmanship of the Huizhou school of inkstone carving, the production of She inkstones always maintained a high standard, thus preserving their status alongside the "Duan" inkstones. From the surviving works, it can be seen that during the Qing and Qing Dynasties, the artistic concepts and technical level of carving She inkstones were still overall improving, for Qing the unique artistic style and school characteristics of the Huizhou school of inkstone carving, which had a profound impact on the carving art in future generations.

2.3.1 The historical background of the development of She inkstone carving art in the Qing Dynasty

The Qing Dynasty was another period of prosperity in Chinese history following the Tang and Song Dynasties. After experiencing the "Hongwu Governance," the

"Yongle Prosperity," and the "RenSheng Governance" et all golden ages, the national power reached its peak. The prosperity of the nation promoted the development of culture and arts, and generated social demand for stationery items. Especially after the middle of the Qing Dynasty, with the development of the commodity economy and the emergence of capitalism, new culture and new sciences emerged accordingly, leading traditional handicraft industries, including the production of stationery, into a new stage of unprecedented development. This was also a period of rapid development in the history of Hui society. Thanks to the salt law reform in the middle of the Qing Dynasty, Hui merchants gradually rose and led to the overall prosperity of the Hui commercial economy. The Hui merchant group, centered on the salt merchants, had a presence throughout the country, for Qing the scene of "no Hui, no town." The Hui merchants had reached an unprecedented peak in their history. As descendants of central plains immigrants, Hui merchants adhered to traditional Confucianism, with the idea of "respected culture and education" deeply rooted in the hearts of Hui merchants. "All things are of lesser worth; only reading is high" was also the spiritual pursuit of Hui merchants. After gaining immense wealth, Hui merchants invested extensively in cultural education in their hometowns, promoting the progress of Hui culture. The prosperity of social economy and culture made the middle and late Qing Dynasties the golden age of Hui craft development. Huang Binhong said in "New An Exquisite Workmanship": "Wealthy merchants and prominent officials, neighbors in sight, hence all sorts of artistry and craftsmanship, for the entertainment of scholars and women, are often superior to other places." It can be seen from this that Mr. Huang Binhong believed that the prosperity of Hui craftsmanship originated from the demand generated by frequent social activities, which was also the most important driving force behind the development of She inkstone carving art in the Qing Dynasty.

2.3.2 The source situation of She stone in the Qing Dynasty

Since the discovery of She inkstones in the Tang Dynasty, the Longwei Mountain in Wuyuan County has always been the main and highest-quality source of inkstone materials, thus She inkstones are also known as "Longwei inkstones." However, due to two cave-ins in the late Southern Song and the early Yuan Dynasty, the production of She stone almost ceased. In the "Narrative of Sending My Nephew Ji Zhou to Sell Inkstones," a text by Jiang Guangqi, a Wuyuan resident during the Yuan Dynasty, detailed these two incidents, which were: "In the fourteenth year of the Zhili era (1277), a high official from Wuyuan County, Wang Yueshan, sought inkstones, and after the laborers' efforts, the stones were exhausted and the mountain collapsed, killing several people," and "Now, in the fifth year of the Zhili era (1288) on the twenty-eighth night of the tenth lunar month, there was a sound like thunder, and the roof tiles across the stream were shaken, causing birds to flee and animals to panic. Several years earlier, the workers had warned me that the good stones had been thoroughly carved, but I did not believe it, and indeed it turned out to be true." Since then, there have been no written records of the mining of Longwei inkstone pits throughout the Qing Dynasty.

According to Jiang Guangqi's text: "The inkstones obtained now are all the remnants of past carvings, washed downstream for several miles, and workers along the river collect them, with few able to fill five inches." And in "Examination of She Inkstones" by Xu Yi during the Qianlong reign of the Qing Dynasty: "Then, the Grand Censor Chen and the Provincial Inspector Liu both issued orders for me to handle the matter, and through several campaigns, I obtained all the ancient-style inkstones from the gentlemen's collections and the old stones stored by the residents of the inkstone mountains at great prices." From these descriptions, it can be inferred that the possible sources of She stone in the Qing Dynasty were: one, local inkstone workers continued the methods from the Yuan Dynasty, searching for remnants at the foot of mountains and along rivers; two, old stones stored by local residents. Additionally, in autumn 1991, an ancient inkstone pit was discovered on Longwei Mountain. Judging from the remnants of iron picks and inscriptions carved on the rock wall dated "Qing Wanli" (1573-1620), it is believed to be an inkstone mining site from the Qing Dynasty, indicating that there was private mining during the Qing Dynasty, but this may not have been well-documented due to its small scale and output.

Due to the extremely unstable source of She stones and the difficulty of meeting social demand, inkstone merchants resorted to importing stone materials from other places to make up for the shortfall. According to existing physical artifacts and literary records, this trade was for two objectives: one, using similar-colored stone from elsewhere to pass off as She stone for profit, as criticized by Jiang Guangqi's question: "Now, would one use the true materials from the Haojiu pit to suffer the humiliation of not selling, or use false stones to deceive?" and was thus labeled as such; two, the social demand for high-quality inkstones like Duan, Chengni, and Tao River stones in the Hui region. Many of the remaining Qing-era inkstones in the ancient Hui region are made from these stones, and there are even a large number of inkstone blanks preserved. The inflow of these stones honed the carving skills of the Hui region's inkstone workers and met the needs of the development of She inkstones.



Figure 2 11

Qing rectangular cloud patterned She inkstone

(picture source: Anhui Museum of Chinese Culture, China), 2024

2.3.3 Interpretation of the Typical Forms of She Inkstones in the Qing Dynasty

The shape and layout of an inkstone directly reflect the artistic thoughts and carving level of the maker, and are influenced by the maker's era, region, and cultural

characteristics. The carving of She inkstones in the Qing Dynasty clearly bears the marks of Huizhou school of printmaking, Huizhou school of engraving, Huizhou three carvings, and the Xin'an school of painting, all of which together reflect the aesthetic recognition of Huizhou culture. In the Qing Dynasty, due to the rarity of the inkstone materials, She inkstone carving innovations were made on the traditional basis of "square and solid is precious, simple and plain is best," leading to significant creativity in shaped and biomimetic forms. Therefore, the large and square inkstones, the elegant and shaped inkstones, and the lively and biomimetic inkstones are typical representations of She inkstone forms in the Qing Dynasty.

I. Since the Tang and Song Dynasties, She inkstones have had a tradition of making square inkstones, as they have been used as tribute to the imperial court since the beginning of mining. During the Southern Tang Dynasty, Emperor Li Houzhu set up an inkstone official position in She County to carve official court inkstones, most of which were in the long square shape. Although the variety of inkstone designs increased after the Song Dynasty, the square large inkstones continued to be popular. The Huizhou inkstone craftsmen of the Qing Dynasty inherited this tradition, always trying to make them as close to the desired shape as possible as long as the stone allows. For example, the Qing era long square Yunwen She inkstone (Figure 2.11), which is 32.5 cm long, 20 cm wide, and 6.5 cm high, has a long square shape. The inkstone surface is decorated with curling cloud patterns, with a continuous sun and moon pond, narrow inkstone edges, and a flat, plain back. This inkstone has a rare dark black stone color and an extremely fine and greasy texture, with a rigorous and delicate carving. Another example is the Qing era long square finger pond scoop handle She inkstone (Figure 2.12), which is 25 cm long, 14 cm wide, and 9.8 cm high. It is in a long square scoop handle style, with a door-shaped opening. The inkstone tray is open and slightly concave due to use, with a one-finger pond on the upper part of the tray, wide edges, and side walls as the feet. The texture is fine and greasy, with a dark black stone color and fish scale patterns.

The square inkstone style of the Qing Dynasty differs significantly from that of the Song Dynasty, as it lacks the straight and sharp lines in the folds of the inkstone edges, ledges, and walls. The line treatment is smooth and graceful. The inkstone surface and edges often use ancient artifact patterns like Kui patterns, cloud and thunder patterns, and geometric patterns, with an overall elegant, simple, and generous appearance.



Figure 2.12

Qing Rectangular One Finger Pool Copy Hand She Inkstone

(picture source: Anhui Museum of Chinese Culture, China),2024

II. Before the Qing Dynasty, works of She inkstones in the shaped style were relatively rare. This was because large She stones were predominant and easy to carve, and tradition dictated that stone carvers did not need to shape them to conform to the stone's natural form. However, due to the scarcity of She stone sources in the Qing Dynasty, large blocks were scarce and difficult to find, making stone carvers extremely reluctant to cut into the stone. They tried their best to maintain the original appearance of the stone and carefully matched their carving to the natural features of the stone. For example, the Qing Dynasty inkstone with a frog and salamander habitat pattern (Figure 2.13) is the longest 21 cm, the widest 1 cm, and 4 cm high. It has a dark black stone color and a very fine texture, with a broad eyebrow pattern. The inkstone is shaped according to the natural form, with a wide and slightly concave ink-holding area, and the ink pool is carved at the top of the ink-holding area. The carver cleverly carved a muddy depression into the ink pool and the inkstone ledge, and a frog was sculpted in

low relief on the ink pool. On both sides of the inkstone, lizards were carved in low relief. The inkstone's back is mostly in its original state, with slight polishing. Another example is the Qing Dynasty inkstone with pebble patterns (Figure 2.14), which is 15 cm long, 12.5 cm wide, and 4.5 cm high. It has a dark black stone color and a very fine texture, with a uniform eyebrow pattern. The inkstone is shaped according to the natural form of pebbles, with the natural pebbles as the material, and a slight carving with a carving knife. The ink-holding area is shallow and flat, with the stone's eyebrow pattern for Qing the water wave ground. The ink pool is carved on the ink-holding area, and pebble patterns are carved around the ink-holding area, the inkstone ledge, and the inkstone edge, creating an overall look of a mountain stream. The inkstone's back retains the natural state and stone pattern of the original stone.

The surviving Qing Dynasty She inkstones, especially shaped inkstones, often display a very warm and lustrous quality, with a texture that is more resplendent than other periods, resembling the luster and smoothness of jade seed materials. This is due to the fact that the inkstone materials have been washed and soaked for a long time by running water. Therefore, the stone carvers were reluctant to discard even small pieces of stone, and they exerted great ingenuity in shaping the stone according to its natural form, resulting in many Qing Dynasty inkstones being small in size but exquisite in artistry.



Figure 2 13

Qing Suixing Frog Lizard Nesting Cave Pattern She Inkstone

(picture source: Anhui Museum of Chinese Culture, China), 2024



Figure 2 14

Qing Sui shaped pebble patterned She inkstone

(picture source: Anhui Museum of Chinese Culture, China), 2024

III. In the Qing Dynasty, due to the strong social trend of appreciating and collecting inkstones among scholars, the scholars themselves had become involved in the design of inkstone forms, making the forms more directly reflect their pursuit of spiritual world. At this time, the overall culture of Huizhou reflected a spiritual demand for elegance, tranquility, and gentleness, thus the biomimetic inkstone forms of the Jin and Wei Dynasties, such as turtles and beasts, which carried auspicious meanings, were abandoned, and instead, shapes like cicadas and geese, which symbolize high integrity, were adopted. Particularly, the shape of cicadas was extremely common in Qing Dynasty She inkstones.

For example, the Qing Dynasty Cicada Shaped Three-legged Eyebrow Texture She inkstone (Figure 2.15) is the longest 35.7 cm, the widest 20.5 cm, and 7 cm high. The stone color is dark black, smooth and lustrous, with fine and delicate textures that feel like soft skin when touched. The inkstone is shaped like a cicada, with the cicada's head serving as the ink pool and the cicada's body as the inkstone surface. The ink pool is deeply concave, and the inkstone surface is flat and spacious, with eyebrow textures. Starting from the inkstone ledge, the carver sculpts the shape of the cicada, with the lines transitioning smoothly and naturally. On the back of the inkstone, there are leaf stems, which curve from the center of the inkstone to the ends, for Qing two legs at the bottom, and the head of the cicada naturally forms the third leg when it touches the ground.



Figure 2.15

Qingchan shaped three legged eyebrow pattern She inkstone
 (picture source: Anhui Museum of Chinese Culture, China), 2024

Another example is the Qing Dynasty Goose Shaped She inkstone (Figure 2.16), which is 16.4 cm long, 8.3 cm wide, and 3.2 cm high, with a fine and delicate texture and a dark green black color. It is shaped like a goose, with the goose's back serving as the inkstone surface, and an ink pool is carved on the back, extending to the inkstone ledge and for Qing the goose's head. The inkstone edges are carved with goose feather patterns; the back has two legs formed by the goose's feet, and the head naturally forms the third leg when it touches the ground.

These two inkstones respectively borrow the habits of cicadas drinking dew and the story of Xi Zixiu changing geese, expressing the scholar's integrity of not following the vulgar and not flattering gold, and conveying a fresh and refined elegance. The carvers have grasped this intention very accurately, with reasonable layouts, neat and smooth lines, and skillful handling. It can be seen that the carving of Qing Dynasty She inkstones made significant progress in exploring the combination of realistic techniques and natural charm.



Figure 2 16

Qing'e shaped She

(picture source: Anhui Museum of Chinese Culture, China), 2024

2.3.4 The artistic characteristics of Qing Dynasty She inkstone carving

The artistic value of an inkstone lies primarily in its carving, which is closely related to the social, political, economic, and cultural context of the time, directly reflecting the changes in thought consciousness and aesthetic tastes. Overall, the artistic characteristics of She inkstone carving during this period can be summarized as follows:

I. In terms of layout, the proportion and scale are reasonable, fully considering the unity of practical functionality and artistic value. While presenting artistic aesthetics, it does not lose its basic functionality as a stationery item. This shows that She inkstones in the Qing Dynasty had begun to evolve from simple practical utensils into decorative crafts.

II. In terms of carving, simple shallow bas-relief and line carving are predominantly used, with the carved patterns and designs being lifelike and exquisitely detailed. There is no complicated three-dimensional hollow carving, and occasional deep carving in certain areas is also for the objectives of harmonizing with the ink pool and tray, making it very harmonious.

III. The use of painting techniques in decoration is already widespread, and great attention is paid to adapting to the physical characteristics of the object and meeting the needs of the overall layout, making it not stand out. Meanwhile, the culture of Huizhou was flourishing during the Qing Dynasty, and many inkstone craftsmen had a certain level of cultural attainment. They had a deeper understanding and interpretation of design aesthetics, allowing them to better reflect this intention during the carving process, making many inkstones resemble naturally formed landscapes.

IV. Thanks to the improvement of processing tools, various lines can be processed and crafted. For example, in shaped and biomimetic inkstones, the method of flared

edges is commonly used, meaning that the edges of the inkstone curl inward towards the tray, which serves a practical objective: it prevents ink from spilling out and makes the shape of the inkstone more aesthetically pleasing. Additionally, the edges and corners are often processed with smooth curves and have a more fluid line expression, with a higher level of polishing.

V. Emphasis is placed on the beauty of the stone material. To fully highlight the color and texture of the stone, excessive decoration is avoided to present a simple and elegant beauty.

2.3.5 The artistic ideas reflected in the carving of Qing Dynasty She inkstones

During the Qing Dynasty, the art of She inkstone carving developed comprehensively, reaching a refined artistic style with characteristics of dignity and elegance, which can be described with the words "purity," "simplicity," and "vigor." The term "purity" refers to high moral integrity and avoidance of vulgarity in conception. "Simplicity" suggests a straightforward and uncomplicated design. "Vigor" denotes a neat and efficient craftsmanship without redundancy. These characteristics are inseparable from the cultural and intellectual changes of the Qing Dynasty. In the middle and later periods of the Qing Dynasty, the Neo-Confucianism of Cheng Yi and Zhu Xi, which had been dominant since the Song and Yuan Dynasties, had declined, and the new Neo-Confucianism of Wang Shou ren's "Unity of Knowledge and Action" gained popularity. The emphasis on practicality and practice had a profound impact on the philosophy of She inkstone production, leading to a trend towards naturalness, simplicity, and closeness to everyday life. Therefore, She inkstones of the Qing Dynasty paid more attention to the combination of artistry, ornamental value, and practicality, with meticulous attention to detail. Compared to the simplicity of Song Dynasty inkstones and the complexity of Qing Dynasty inkstones, the Qing Dynasty inkstones were more plain and elegant, conforming more closely to the traditional Chinese scholarly aesthetic. Despite the two greatest disasters in the history of She stone production, the art of She inkstone carving maintained a strong upward momentum under the strong support of the economy and culture of Huizhou. The craftsmen of Huizhou, with their refined artistic thoughts and exquisite carving techniques, left behind numerous artistic treasures for future generations. Particularly in the middle and later periods of the Qing Dynasty, the artistic style of She inkstone carving matured and solidified, forming a unique regional style and school characteristics, ultimately developing into the important carving category of "Huizhou School of Inkstone Carving." Therefore, the Qing Dynasty was a key period in the history of She inkstone development, serving as a bridge between past and future, and deserves our attention and research.

2.4 Analysis of She Inkstone Creation in the Qing Dynasties

2.4.1 The material of She inkstones

She inkstones, a name that shines with unique light in traditional Chinese culture, is produced in Longwei Mountain, Wuyuan County, Jiangxi Province. It is renowned as one of the "Four Great Inkstones in China" for its delicate, tough, and warm stone texture. The beauty of She inkstones's material comes from the geological evolution hundreds of millions of years ago, when the Longwei Mountain area experienced complex geological activities, forging a unique Longwei stone. This type of stone not only has a delicate texture and a luster like oil, but also has uniform particle size and a smooth touch like jade, making it an excellent material for making inkstones.

The stone texture of She inkstones is rich and diverse, which is a unique imprint bestowed upon it by nature. These textures can be roughly divided into five categories: ribbed, eyebrow, gold star, golden halo, and caviar, each with its unique charm and aesthetic value.

Ribbons (as shown in Figure 2.1), as the name suggests, have a texture that is like fine silk, delicate as silk, layered and layered, giving people a delicate and delicate visual enjoyment. The distribution of ribbed patterns is uniform and the texture is pure, making it one of the most common texture types in She inkstones.



Figure 2 17

She inkstones

(picture source: by the author), 2024

Eyebrow lines (as shown in Figure 2.2), with their texture resembling a pair of slender eyebrows, are vivid and lifelike, as if carefully depicted by nature. The smooth and clear lines on the surface of the eyebrow patterned inkstone add infinite charm to the She inkstone.



Figure 2 18
She inkstones
(picture source: by the author), 2024

Venus are metallic dots scattered on She inkstones, varying in size and shape. They shine like stars under sunlight, adding a mysterious and elegant natural beauty to the stone.



Figure 2 19
She inkstones
(picture source: by the author), 2024

Golden halo (as shown in Figure 2.4), its texture presents an irregular halo pattern, as if the reflection of sunlight shining through clouds on the water surface. The color of the golden halo is rich, some are elegant like clouds, and some are rich and colorful, making the She inkstone a bit playful and agile in stability.



Figure 2 20
She inkstones
(picture source: by the author), 2024

Fish roe (as shown in Figure 2.5), this texture forms dense small dots on the surface of the inkstone, like fish seeds, giving people a rhythm of life. Fish roe textured inkstones often have a finer texture and a smoother feel, adding a unique texture to She inkstones.



Figure 2 21
She inkstones
(picture source: by the author), 2024

The unique textures of She inkstones not only enhance the aesthetic appeal of the inkstone, but also endow it with various practical functions. For example, the inkstones of Venus and Golden Halo can better disperse ink particles during grinding, making the ink color more uniform; Ribbons, eyebrow patterns, and fish roe inkstones can better store ink and keep it moist for a long time.

The beauty of She inkstones's material is not only reflected in its stone quality, but also in its texture. As one of the Four Treasures of the Study, the She inkstones is not only a practical tool for calligraphy creation, but also a work of art that carries the profound cultural heritage of the Chinese nation. It inherits the wisdom and skills of ancient craftsmen and witnesses the prosperity and development of Chinese calligraphy art.

2.4.2 The Form and Function of She inkstones

She inkstone, as a treasure of Chinese traditional culture, its combination of shape and function not only shows the outstanding skills of ancient craftsmen, but also reflects the Chinese people's dual pursuit of aesthetics and practicality. From simple geometric inkstones to complex carved inkstones, each shape has its unique charm and practical value.

In terms of writing, square inkstones have become the preferred choice for calligraphy enthusiasts due to their flat and stable surface. For example, the "hand copying inkstone" is not only convenient for grinding ink, but its simple design also conforms to modern aesthetics. Circular inkstones, such as the "lotus leaf inkstone," have soft edges and smooth lines that make writing feel more comfortable and suitable for writing delicate fonts.

For calligraphers who pursue artistic effects, carving inkstones such as "carved dragon inkstones" provide another option. These inkstones not only meet the practical needs of writing, but their exquisite carving art has also become a source of inspiration for the writing process.

In addition, natural inkstones such as "landscape inkstones" have become a favorite among collectors due to their unique natural beauty and irreplicability. They not only showcase the incredible craftsmanship of nature, but also embody the concept of harmonious coexistence between humans and nature.

Overall, the function of She inkstones is not limited to writing and grinding ink, but also carries the value of traditional Chinese culture and art, and is an indispensable member of the Four Treasures of the Study. In modern times, She inkstones still attracts people's attention with its unique charm, becoqing an important link between the past and the present, tradition and modernity.

The shape of inkstones has been discussed in many specialized books on inkstones

by our predecessors, such as the various forms listed in Gao Shusun's "Inkstone Inscription": Fengchi inkstone, Yutang inkstone, Yutai inkstone, Penglai inkstone, Biyong inkstone, Fangxiang inkstone, Langguan inkstone, Fengzi inkstone, Renmian inkstone, Qushui inkstone, octagonal inkstone, Sizhi inkstone, Lianye inkstone, Mati inkstone, Fengchi inkstone, Yuanchi inkstone, Yuhuan inkstone, Shiren inkstone, Pool inkstone, Taishi inkstone, Dongpo inkstone, Dutang inkstone, Neixiang inkstone, Hulu inkstone. Inkstone, Double Legged Inkstone, Sole Legged Inkstone, Moon Pool Inkstone, Square Pool Inkstone, Axe shaped Inkstone, Gui Inkstone, Ding Inkstone, Yuan Inkstone, Tian Inkstone, Chan Inkstone, Turtle Inkstone, Hu Inkstone, Piao Inkstone, Bi Inkstone, Ji Inkstone, Shan Stone Inkstone, Shan Zi Inkstone, Tai Chi Inkstone, Han Hu Inkstone, Song Duan Inkstone.

Classification and specific style description of She inkstones:

Classification of Forms

1. Geometric inkstone: This type of inkstone mainly features simple geometric shapes, including square, circular, and elliptical shapes, emphasizing the simplicity of lines and the regularity of forms.

Square inkstone: Represented by styles such as "hand copying inkstone", it has distinct edges and corners, a flat surface, and is suitable for daily writing use.

Circular inkstone: such as the "lotus leaf inkstone", with a circular surface and smooth edges, giving a soft feeling and suitable for writing delicate fonts.

Elliptical inkstone: such as the "elliptical hand copying inkstone", which combines the characteristics of square and circular shapes, is both stable and gentle.

2. Natural shaped inkstone: This type of inkstone is designed according to its natural form, with various shapes emphasizing the beauty of nature.

Alien inkstone: such as the "landscape inkstone", designed into a creative landscape based on the natural texture and shape of the inkstone.

3. Carved inkstone: This type of inkstone has various patterns carved on the surface of the inkstone, which has high artistic value.

Carving inkstone: such as "carving dragon inkstone", carved with dragon patterns on the surface of the inkstone, which is both practical and ornamental.

Select specific styles based on different uses

Writing inkstone: For daily writing, square inkstones such as "hand copying inkstones" are ideal choices because their flat surface makes it easy to grind ink.

Artistic creation inkstone: When creating or collecting calligraphy, carved inkstones such as the "carved dragon inkstone" are more suitable as works of art due to

their unique artistic style and exquisite carving.

Gift Inkstone: When given as a gift, natural shaped inkstones such as "landscape inkstones" can better express the meaning of cultural inheritance and respect due to their unique natural beauty.

Summary of the functions of She inkstones

1. Grinding ink: The stone of She inkstones is delicate and can grind out fine and uniform ink, suitable for various writing and painting needs.

2. Ink storage and preservation: The inkstone is designed with an ink storage tank to keep the ink moist and prevent it from drying up.

3. Licking and polishing: Some inkstones are equipped with a licking area, which is convenient for writers to polish their pens during the writing process.

4. Art appreciation: The exquisitely carved She inkstone itself is a work of art with high ornamental value.

5. Cultural Inheritance: As one of the Four Treasures of the Study, She inkstones carries the inheritance of traditional Chinese culture and calligraphy art.

According to the usage requirements of the company, there are mainly the following styles of inkstones (as shown in Figure 2.6): 1. Pool style; 2. Direct flow type; 3. Flat flow type; 4. Diagonal flow type; 5. One word format; 6. Stone channel type; 7. Separate pool and hall design.

1. Dripping Pool Style: The inkstone design of Tangchi inkstone is usually wide and flat, which facilitates the flow and distribution of ink during grinding. This type of inkstone was quite common in ancient times, such as the design of the Tangchi inkstone in the Tang Dynasty, which is a typical representative of the Tangchi inkstone. There are also exquisite Tangchi inkstones in modern and Qing dynasties, such as the Tangchi inkstone collected by the Capital Museum. The stone is hard like jade, with a brown surface and speckled spots inside, and is finely crafted.

2. Straight flow style: The design feature of the straight flow inkstone is that its inkstone pool has a relatively straight and long shape, which may focus more on the straight flow of ink. In the search results, although there is no direct mention of a detailed description of the straight flow inkstone, based on its name, it is speculated that it may be suitable for writing or painting scenes that require even and fast ink flow.

3. Flat flow style: The flat flowing inkstone may refer to a design where the inkstone pool is relatively flat and wide, similar to the flowing pool style, but may focus more on the flatness of the inkstone surface and the uniform distribution of ink. This type of inkstone may be more convenient for controlling the amount and distribution of ink when writing or drawing.

4. Slant flow style: The design feature of the oblique flow inkstone is that its inkstone pool may have a certain inclination angle, allowing ink to flow in a certain direction during grinding. This design may contribute to the uniform distribution of ink and reduce the accumulation of ink on the inkstone

5. One character style: The inkstone is straight and the inkstone pool is small, forging a straight line, suitable for writing in lowercase.

6. Stone channel style: The inkstone is surrounded by concave grooves, which store a lot of ink and are suitable for general writing.

7. Pool Hall Separation Type: The ink pools in the inkstone hall are separated and not connected to each other. Water is stored in the inkstone pool, and ink is stored in the inkstone hall, making it easy to use a pen to dip in water and adjust the intensity of ink color.

From this, it can be seen that as a product, the form and function of the inkstone are closely related, and the function is related to the needs of the user. Through the analysis of the shape and function of the inkstone, this point can be proved, and this factor will be taken into account in the development and design of the inkstone in the following text. The basic idea is to first analyze consumer needs and develop product functions based on those needs, while the form either serves the function or becomes a decoration that fits its atmosphere.

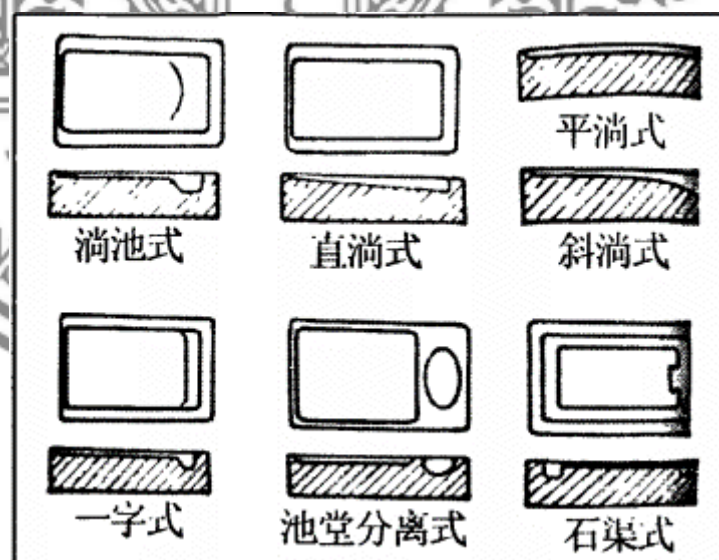


Figure 2 22

She inkstones

(picture source: by the CNki), 2024

2.5 The Appearance Decoration and Theme of She inkstones in the Qing Dynasties
She inkstones, referring to Shezi tablets, underwent significant development and

transformation in terms of appearance, decoration, and themes during the Qing dynasties in China. These periods saw the rise of intricate carvings and the integration of various artistic styles into Shezi tablets, making them not only functional writing tools but also exquisite works of art.

In inkstone carving art, the selection of patterns can be mainly divided into two categories. One is the traditional deformed patterns, such as withered patterns, thunder patterns, cloud patterns, continuous branch patterns, and treasure shaped patterns. The other level involves more realistic patterns such as landscapes, flowers, fruits, grass and insects, birds and animals, figures, as well as concrete dragon, wind, and auspicious patterns. The use of realistic patterns has become more and more popular in the production of modern inkstones, especially characters, such as Ladies, Arhat, Buddha statues, etc. The distribution of inkstone carving patterns on the surface of the inkstone mainly includes individual patterns, suitable patterns, and decorative patterns. Individual pattern: a pattern that can be separated from the surrounding patterns and can exist independently with a sense of completeness. Generally safe

Placed in the inkstone pool or at the junction of the inkstone pool and the inkstone hall, individual patterns often use auspicious patterns, such as Kui Long, Chi Long, Xian Guo, and figures. Suitable pattern: Combining pattern patterns in specific shapes on the surface of the inkstone is a form of combining individual patterns. The inkstone pool and inkstone hall are fused into the pattern, which not only maintains the practical functions of grinding, storing ink, and water in the inkstone, but also increases its aesthetic appeal. The most common ones are circular, rectangular, crescent shaped, etc., often using patterns with certain auspicious meanings, achieving the level of "the picture must be intentional, and the meaning must be auspicious". Edge decoration pattern: Carving cutting patterns around the edge of the inkstone to increase its ornamental value. This is a commonly used decorative method, mainly based on carving patterns on ordinary edges and raised armor edges. Common decorative patterns include: loop pattern, water wave pattern, auspicious cloud pattern, dragon pattern, treasure pattern, entwined branch pattern, and so on.

Appearance and Decoration

I. During the Qing dynasty, Shezi tablets experienced a shift towards more intricate and detailed decorations. The surfaces of these tablets were often adorned with highly detailed carvings of flora, fauna, landscapes, and mythical creatures. The carvings were not only decorative but also reflected the owner's social status and cultural preferences. The use of raised relief and intricate detailing increased, giving the tablets a three-dimensional effect.

Qing dynasty Shezi tablets also saw the introduction of rectangular and irregular shapes, moving away from the traditional square shape. These irregular tablets were often carved to mimic natural elements such as rocks, mountains, or even bodies of

water, reflecting the scholarly interest in natural aesthetics and the Daoist philosophy of harmony with nature.

In the Qing dynasty, Shezi tablet themes often reflected the cultural and philosophical interests of the time. Carvings might include traditional Chinese motifs such as the Eight Trigrams, the Five Elements, and Confucianist symbols. Mythical creatures like dragons and phoenixes were popular, symbolizing power, wisdom, and prosperity. Additionally, scenes from Chinese poetry and literature were frequently depicted, showcasing the owner's literary taste and cultural refinement.

II. The Qing dynasty saw an even greater emphasis on decorative complexity and artistic flair. Shezi tablets of this period often featured exceptionally fine craftsmanship, with carvings that were not only detailed but also uniquely expressive. The Qing dynasty was known for its intricate "clapper" carvings, which depicted scenes from Chinese literature, history, and everyday life.

The decoration on Qing Shezi tablets diversified to include themes such as Chinese classics, historical events, landscapes, and abstract patterns. The use of various materials, including precious stones and metals, was also common, adding to the overall aesthetic appeal and status symbol of the tablets.

The Qing dynasty saw a broader range of themes incorporated into Shezi tablets. In addition to the traditional Confucian and Daoist symbols, tablets often featured imperial imagery, including emperors, court officials, and imperial coats of arms. The Qing dynasty's appreciation for Tibetan Buddhism and Manchu culture also influenced the designs, with carvings of Buddhist deities and Manchu warriors becoming common.

Scenes from Chinese operas, folk tales, and everyday life were also popular, reflecting the dynasty's interest in the diversified aspects of Chinese culture. The Qing rulers, known for their patronage of the arts, encouraged the integration of various ethnic and cultural elements into Shezi tablet design, making them not only writing tools but also symbols of cultural identity and national unity.

In summary, the Qing dynasties witnessed the evolution of Shezi tablets from functional writing implements to highly decorative and thematic works of art. The appearance, decoration, and themes of She inkstones during these periods reflect the rich cultural, philosophical, and artistic traditions of China, as well as the social and political contexts of their time.

2.6 The craftsmanship

As a traditional handicraft, the production process of She inkstones is very different from modern mass-produced industrial products, which also results in its market sales being far inferior to modern industrial products. The preservation of related skills alone is not enough for the inheritance of traditional handicrafts. Having a certain market is the guarantee of product vitality. Through the summary and analysis

of the material, shape, function, and appearance decoration of She inkstone in this chapter, we have gained a basic understanding of its characteristics. The material, shape, function, and appearance decoration of She inkstones correspond to the three elements of product design, as well as the material, function, and appearance of the product. The three elements of a product are the carrier and embodiment of design concepts, which are guided by the consumer market. A marketable product is based on meeting consumer needs. Therefore, by analyzing the consumption value factors of consumer groups and interpreting materials, functions, and appearances based on different consumption orientations, the design and development of She inkstones can be achieved, which runs through the ideas of the following article:

1. Material selection:

The production of She inkstones first selects high-quality stone materials, which mainly come from Longwei Mountain in Wuyuan County, Jiangxi Province, China. Longwei stone is renowned for its delicate texture and beautiful texture, making it an ideal choice for making high-quality She inkstones.

When mining stone, it is necessary to ensure the integrity and uniform color of the stone in order to produce the best inkstone.

2. Design:

In the design phase, craftsmen will creatively design inkstones based on their natural shape and texture to ensure a combination of practicality and artistry.

When designing, we will consider how to maximize the natural characteristics of the stone while also meeting usage and aesthetic needs, making each inkstone unique.

3. Cutting:

Cutting is an important step in inkstone production, and craftsmen will use professional tools to cut the stone into rough shapes, laying the foundation for subsequent polishing and carving.

Accurate control of force and angle is necessary during cutting to avoid damaging the texture and quality of the stone material.

4. Polishing:

Polishing is the process of smoothing and smoothing the surface of an inkstone, using various grinding tools and abrasives to remove burrs and unevenness after cutting.

When polishing, apply even force to ensure that the surface of the inkstone is flat, preparing for the next carving.

5. Carving:

Carving is the most technical and artistic process in the production of She inkstones. Craftsmen will meticulously carve on the polished inkstone according to the design pattern.

The carved content usually includes various patterns, motifs, and texts, which not only decorate the inkstone but also symbolize good luck and beautiful wishes.

6. Fine Grinding:

After the carving is completed, the inkstone needs to be finely ground to make the surface smoother and the lines smoother, ensuring the clarity of the carving details.

Be particularly careful when grinding to avoid damaging the already carved patterns and decorations.

7. Washing:

After completing the carving and fine grinding, the surface of the inkstone may be covered with dust and impurities, and it needs to be cleaned with clean water to maintain the smoothness and beauty of the inkstone.

8. Drying:

The cleaned inkstone should be placed in a well ventilated area for natural drying, or dried using drying equipment to accelerate the drying process. This is to ensure that the inkstone is completely dry before use and to avoid moisture.

9. Maintenance:

In order to maintain the service life and effectiveness of She inkstones, it is necessary to use oil (such as walnut oil) for proper maintenance before and after use.

Maintenance can help form a protective layer on the surface of the inkstone, preventing the stone from drying out and cracking after ink absorption.

10. Packaging:

Finally, the completed She inkstones will be carefully packaged for sale or use by users. Packaging not only protects the inkstone, but also increases its value as a gift.

The entire production process of She inkstones reflects the Chinese craftsmen's respect for traditional craftsmanship and pursuit of beauty. Each step is a test of the craftsmanship and patience of the craftsmen, ultimately creating practical and highly artistic stationery.

2.7 Related Research

Reference	Title	Publication	Abstract
Yu Feipeng, 2010	She: Wu Chu Qingyin	Beijing Arts and Crafts Publishing House, 2010	This extensive treatise delves into the historical tapestry of Wu Chu Qingyin, unraveling the intricate artistic features and profound cultural significance of She art. It explores the unique allure and distinguished status of this art form, shedding light on its essence and impact.
Pei Jianhua, 2000	She is a peculiar flower	Huaxia Spark, 2000	The work meticulously dissects the elements that give She art its distinctive charm and examines its special status within the broader context of traditional Chinese art, providing a nuanced understanding of its appeal and its place in cultural history.

Reference	Title	Publication	Abstract
Hu Zhongtai, 2010	Interpretation of She	Collection Magazine, 2010	This scholarly examination delves deeply into the origins of She art, its technical hallmarks, and the cultural value it embodies, offering a comprehensive perspective on its evolution and significance in Chinese cultural heritage.
Chen Keyi, Guo Bingyao, 2019	Protection and Reflection on the Production Techniques of She	Creativity and Design Journal, 2019	The monograph proposes effective strategies for safeguarding the traditional production techniques of She art as a vital part of cultural heritage, ensuring its survival for future generations.
Yu Feipeng, 2005	Yan Tan	Yunnan People's Publishing House, 2005	This detailed investigation delves into the historical context, technical mastery, and profound significance of Yan Tan, providing a comprehensive overview of this integral aspect of She art.

Reference	Title	Publication	Abstract
Wang Jingjing, Fan Jialu, 2014	A Brief History of the Development of She Production Techniques	Journal of Chifeng University, 2014	The study traces the historical trajectory and the evolution of She production techniques, highlighting the innovations and changes that have shaped this art form over the centuries.
Zong Huating, 2007	The artistic value of She	Art Grand View Journal, 2007	This exploration evaluates the contemporary relevance of She art, examining its artistic and cultural significance in today's society and its role in preserving traditional Chinese heritage.
Ren Daobin, Guan Naiping, 2010	Inkstone and the Treasures of Chinese Literature	Henan Fine Arts Publishing House, 2000	The monograph delves into the profound connection between inkstones and Chinese literature, elucidating their pivotal role in the lives of scholars and literati, who have long valued these objects for their cultural and artistic importance.

Reference	Title	Publication	Abstract
Zhengzhou, 2000	Research on the Design Art of Literati Using Inkstones	Suzhou University, 2011	This analysis illuminates the design preferences of Chinese literati and the unique design features of inkstones that have emerged from these cultural influences, offering insight into the artistic sensibilities of the intellectual elite.
Bai Guiwei, 2011	Decorative Themes and Design Language Features of She	Creativity and Design Journal, 2018	The study explores the decorative themes and the design language intrinsic to She art, providing a rich understanding of the symbolic and aesthetic elements that define this craft.
Chen Keyi, 2018	Aesthetic Characteristics of Inkstone Carving Art in the Qing Dynasties	Beijing Institute of Fashion Technology, 2018	This investigation uncovers the aesthetic qualities and historical value of inkstone carving during the Qing dynasties, revealing the art's evolution and its contribution to Chinese cultural heritage.

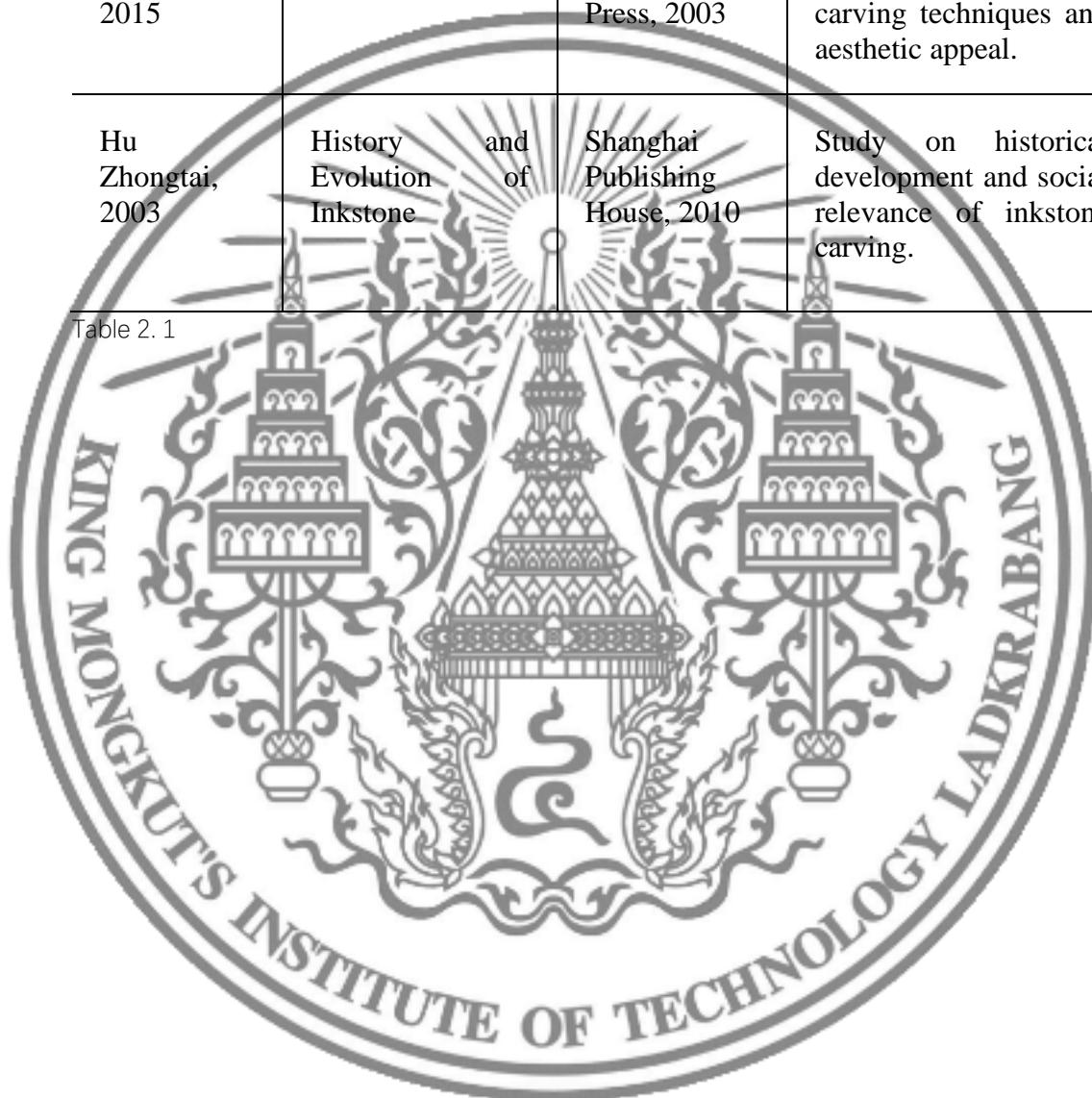
Reference	Title	Publication	Abstract
Shao Linlin, 2018	Development Strategy of She under Government, Application, Industry, Research and Development	Journal of Wanxi University, 2019	The monograph examines the strategies for the development of She art within the framework of government and industry initiatives, focusing on the sustainable growth and promotion of this art form.
Chen Keyi, Guo Bingyao, 2019	Study on the development of She Industry from the perspective of intangible cultural heritage	Anhui Medical University, 2021	This section spotlights Shexian County, discussing its significant status as a repository of intangible cultural heritage, including the rich history, cultural value, and artistic features of She art.
Zhu Gaoqi, 2021	Speaking Inkstone	Shanghai Science and Technology Education Press, 1994	The work provides a comprehensive overview of the four treasures of the study—writing brush, inkstick, paper, and inkstone—as they are understood and cherished within Anhui's cultural tapestry.

Reference	Title	Publication	Abstract
Sang Xingzhi, 1994	The Four Treasures of the Study in Anhui, China	Anhui Science and Technology Press, 1983	This collection gathers the works of the renowned artist Huang Binhong, offering a valuable resource on traditional Chinese painting and calligraphy that informs and enriches the study of She art.
Mu Xiaotian, 1983	Collected Works of Huang Binhong	Shanghai Calligraphy and Painting Publishing House, 1999	This concise introduction offers an accessible entry point to the world of She art, providing essential information to those unfamiliar with its history and significance.
Huang Binhong, 1999	Overview of She	Wuyuan County Cultural and Historical Committee, 2007	The exploration of Huizhou's traditional crafts includes a focused examination of She art, showcasing the region's rich cultural heritage and the unique contributions of its artisans.
Hu Zhongtai, 2007	Overview of She	Wuyuan County Cultural and Historical Committee, 2007	This guidebook within the Siku Art Series provides a practical manual on Shezhou inkstone carving, offering insight into techniques and the artistic tradition that has shaped this craft.

Reference	Title	Publication	Abstract
Zhang Shufen, 2007	Huizhou Crafts	Anhui People's Publishing House, 2005	This updated volume offers the latest insights into the four treasures of the study within Anhui culture, reflecting contemporary understandings and developments in the field.
Bao Yilai, 2005	Shezhou Inkstone Manual	Shanghai Ancient Books Publishing House, 1991	This guide serves as a practical resource for enthusiasts and collectors, providing detailed information on She carving techniques and offering tips for identifying authentic pieces.
Tang Ji, 1991	The Four Treasures of the Study in Anhui, China (Revised Edition)	Anhui Science and Technology Press, 1983	This scholarly work delves into the Longwei inkstone, examining its unique carving techniques, aesthetic appeal, and the cultural significance it holds within the realm of Chinese art.
Mu Xiaotian, Li Qing, 1983	She Carving Techniques and Identification Collection	China Friendship Publishing Company, 2015	The monograph explores the historical journey of inkstone carving, considering its social relevance and the enduring impact it has had on Chinese culture and artistic expression.

Reference	Title	Publication	Abstract
Hu Zhongtai, 2015	Longwei Inkstone	Jiangxi Education Press, 2003	Study on the Longwei inkstone and its unique carving techniques and aesthetic appeal.
Hu Zhongtai, 2003	History and Evolution of Inkstone	Shanghai Publishing House, 2010	Study on historical development and social relevance of inkstone carving.

Table 2. 1



CHAPTER 3

RESEARCH METHODOLOGY

The research will adopt various methods, including historical research, field investigations, interviews, and practical experiments. The materials for review will include various She inkstones from the Qing dynasties, which will come from museums, private collections, and art galleries. These physical products will be analyzed for their craftsmanship, design patterns, and artistic themes. In addition, the study will utilize second-hand materials such as historical texts, academic articles, and archival records related to the cultural significance and technical aspects of inkstones. The author will conduct on-site inspections, visit historical sites related to She inkstone production, and interview contemporary craftsmen who preserve traditional craftsmanship techniques. The data will be collected through visual documents, including photos and detailed measurements, as well as through analysis of market trends and consumer preferences related to product design. Systematic analysis of quantitative and qualitative data will be conducted to identify key design elements and principles applicable to modern product design, ensuring that research results are based on historical context and contemporary relevance.

1. Determination of population and sample group
2. Selection of research tools
3. Development of research tools
4. Data collection
5. Data analysis

3.1 Research Objectives 1: Study on the culture craftsmanship of She inkstones from the qing dynasties She inkstones

3.1.1 Population and Sample Group

This research aims to explore and analyze the traditional craftsmanship of She inkstones, a renowned type of inkstone that originated during the Qing dynasties. She inkstones are highly valued for their artistic and cultural significance, and the mastery of their production techniques reflects the rich heritage of Chinese craftsmanship. By studying the traditional craftsmanship of She inkstones, this research seeks to achieve the following objectives:

(1) Expert consultations (3 people, purposive sampling)

The expertise of museum professionals and scholars in the field of cultural relic research, historical verification, and craft identification will provide valuable insights into the historical context, artistic features, and production techniques of She inkstones. The research will refer to expert opinions from institutions such as the Anqing Museum, and the Huizhou Historical Museum to ensure the authority and academic depth of the

research content.

1. Ye Ziyu: Deputy Director of Anqing Museum and a senior cultural and museum research fellow, has been engaged in the cultural and museum industry for nearly 20 years, specializing in artifact collection, preservation, and research. In the field of Huizhou cultural studies, she possesses a deep understanding of She inkstones, a recognized intangible cultural heritage. She has participated in numerous artifact acquisition and authentication projects related to She inkstones and has systematically studied their historical evolution, quarry classifications, carving techniques, and cultural significance.

2. Yang Xiaoqiao: Deputy Director of Anqing Museum and a senior curator, has nearly 25 years of experience in museum work. In the field of She inkstone research, she focuses particularly on its social value and contemporary dissemination. She believes that She inkstones not only carry the historical memory of Huizhou culture but also serve as a crucial medium for the development of calligraphy and painting arts. She has organized numerous themed exhibitions and cultural lectures on She inkstones, inviting craftsmen, collectors, and researchers to explore their artistic value and market prospects.

3. Zhang Yu: A docent at the Huizhou History Museum, is highly regarded for her expertise and engaging storytelling style, making her a favorite among visitors. With a solid foundation in historical and cultural knowledge and a deep understanding of Huizhou culture, she has become a standout member of the museum team. She has systematically studied the historical origins, material characteristics, carving techniques, and unique cultural significance of She inkstones in the literary world.

Research Tools

1. Structured Interviews: Conduct semi-structured interviews with experts, craftsmen, and collectors to gather information on the artistic characteristics, historical background, and market reception of She inkstones from the Qing dynasties.

2. Observation: Perform on-site observations at museums, cultural heritage sites, and workshops to document the craftsmanship and design features of She inkstones, as well as the production processes involved.

3.1.2 Research Tools

1. Focus Group Discussion: Convene focus groups consisting of designers, artisans, and historians to engage in in-depth discussions. These discussions will aim to identify the specific design elements, symbolic meanings, and cultural connotations that define the identity of Song Dynasty ceramic incense burners. By exchanging ideas and perspectives, participants will help determine the design directions that resonate with the historical essence of these artifacts.

2. Observation: Conduct comparative observations of existing modern ceramic incense burner designs alongside traditional Song Dynasty models. This will involve analyzing the design aesthetics, materials used, and production techniques of contemporary incense burners and contrasting them with the distinctive features of the Song Dynasty ceramic incense burners. The goal is to discern how the identities of the traditional burners have been interpreted, preserved, or transformed in modern designs.

3.1.3 Development of Research Tools

1. Literature Review: Collect and analyze a comprehensive array of historical, cultural, and artistic studies related to She inkstones from the Qing dynasties. This will involve examining texts, historical records, and academic papers to understand the

context in which these inkstones were produced and the cultural values they embody.

2. Interview Guide: Develop a structured set of questions designed to elicit detailed information from experts, craftsmen, and enthusiasts. The interview guide will include questions such as:

2.1 What are the defining characteristics of the design and craftsmanship of She inkstones from the Qing dynasties?

2.2 How have the traditional decorative styles and craftsmanship techniques of She inkstones influenced contemporary craft practices and design aesthetics?

2.3 What challenges and opportunities exist in preserving and revitalizing the traditional craft of She inkstone production in the modern era?

3. Observation Checklist: Create a checklist to meticulously record the physical attributes of She inkstones displayed in museums and cultural heritage sites. This will include noting the following details:

3.1 The shape and size of the inkstones, including any unique features or design elements.

3.2 The patterns and decorative motifs present on the inkstones, and how they may reflect the cultural and artistic trends of the time.

3.3 The glazing techniques used, as well as the colors and finishes of the glaze, which can indicate the level of craftsmanship and the materials used.

3.4 Any inscriptions or markings that may provide insights into the history or provenance of the inkstones.

3.1.4 Data Collection

1. Field Visits: Conduct field visits to prominent museums such as the Huizhou History Museum, Huizhou Culture Museum, and Anqing Museum. These institutions house a wealth of She inkstones, providing an excellent opportunity to observe and document the traditional craftsmanship of these artifacts. The visits will aim to gather firsthand information on the design, production techniques, and artistic styles of the inkstones.

2. Expert Interviews: Engage in expert interviews with designers, and collectors who have a profound understanding of She inkstones. These interviews will be conducted with individuals who have dedicated their expertise to the study and appreciation of traditional Chinese crafts. The insights gained from these interviews will shed light on the nuances of She inkstone craftsmanship, its historical evolution, and its relevance to contemporary design practices.

3. Data Compilation: Compile and summarize the artistic characteristics of She inkstones from the Qing dynasties. This will involve collecting and analyzing data on the materials used, the production processes employed, and the decorative techniques that distinguish these inkstones. The compilation will aim to provide a comprehensive overview of the traditional craftsmanship that has been passed down through generations, and how it has been adapted or preserved over time.

3.1.5 Data Analysis

This investigation utilizes inductive analysis, systematically categorizing and summarizing qualitative data gathered from interviews with experts, craftsmen, and enthusiasts, as well as from observations of She inkstones in museum collections. The aim is to discern the core artistic elements and craftsmanship techniques of She inkstones from the Qing dynasties that can be effectively applied to modern design practices.

3.2 Research Objectives 2: Design of contemporary She inkstones

3.2.1 Population and Sample Group

The evaluation of the modern She inkstone design will involve three university teachers, selected through purposive sampling, due to their extensive knowledge and experience:

To determine the qualified personnel for the evaluation of She inkstone design, the researchers employed university fine arts professors 3 persons (purposive sampling).

1. Wang Hanqing: Professor at the Department of Fine Arts, Anqing Normal University. The department features multiple specialties and teaching and research sections, with a focus on both teaching and research.

2. Chen Xiaoke: Associate Professor of Fine Arts at Anqing Normal University. He serves as a member of the Degree Committee in the Fine Arts College and also holds a position on the Teaching Committee.

3. Chen Ke: Associate Professor of Design at Anqing Normal University, has extensive experience in teaching and research. With nearly 30 years in the field, he has been deeply engaged in design and is dedicated to cultivating innovative design talents. His courses emphasize the integration of theory and practice, highlighting the organic unity of art and functionality.

3.2.2 Research Tools

Expert Inquiry Survey (Expert Questionnaire)

In pursuit of a nuanced understanding, an open-ended questionnaire survey is being conducted among a trio of distinguished university professors specializing in carving arts. This strategic engagement aims to harvest their informed opinions, constructive feedback, and insightful suggestions regarding the design aesthetics, mechanical functionality, and the harmonious integration of culture within my contemporary She inkstone creation.

For meticulous data collection, the following tools are meticulously employed:

1. Detailed Notations: Assiduously capturing the expert feedback and poignant observations to distill key insights.

2. Audio Recorder: Utilized to document discussions in their entirety for thorough subsequent analysis.

3. Photographic Documentation: Employed to encapsulate the moment, capturing the experts' engagement and their spontaneous reactions for a comprehensive visual record.

3.2.3 Development of Research Tools

She Inkstone Expert Assessment Protocol

An Expert Evaluation Survey, meticulously crafted with a comprehensive scoring rubric (total score: 100), has been designed to rigorously appraise the quality and cultural resonance of the modern She inkstone design. This evaluation ensures that the design not only adheres to the exacting standards of the industry but also fulfills the profound thematic expectations associated with this traditional art form.

Survey Grading Scale:

4.51-5.00: Very satisfied

3.51-4.50: Satisfied

2.51-3.50: Neutral

1.51-2.50: Slightly dissatisfied

1.00-1.50: Dissatisfied

Instrument Development:

The questionnaire, developed on the foundation of field studies and the theoretical framework proposed by Sumitra Sriviboon, has been meticulously validated by a panel of esteemed experts:

- Assoc. Prof. Dr. Thanin Rattanawong
- Asst. Prof. Dr. Sittichai Charoensethasilp
- Asst. Prof. Dr. Panthip Wanichjiittikarn

To ensure the accuracy and reliability of the assessment tool, the Index of Objective Congruence (IOC) is utilized in the pre-finalization phase, guaranteeing that the questionnaire is robust and fit for objectives prior to the commencement of data collection.

3.2.4 Data Collection

1. Design Experimentation: Create prototype designs for modern She inkstones by incorporating elements from the traditional craftsmanship of the Qing dynasties.
2. Expert Feedback: Conduct interviews with designers and artisans to gather feedback on the feasibility and appeal of the proposed designs.
3. Design Adjustments: Refine the designs based on the feedback received from experts to ensure a successful blend of tradition and modernity.

3.2.5 Data Analysis

1. Qualitative Analysis: Summarize the feedback from experts on the feasibility and appeal of the modern She inkstone designs.
2. Comparative Analysis: Compare the traditional and modern She inkstone designs to refine the contemporary product concepts ensure they resonate with both historical significance and modern usability.

3.3 Research Objectives 3: Evaluate the satisfaction of the teenagers towards product design of the contemporary She inkstones

3.3.1 Population and Sample Group

Population: A total of 14,216 young people aged 18-24 in Huizhou Town, She County, Huangshan City, Anhui Province, China (according to the seventh national population census in 2020).

Sample: includes 99 young people aged 18-24 living in Huizhou Town, Huangshan City, Anhui Province, China (Yamane, 1973: 886).

3.3.2 Research Tools

Satisfaction Questionnaire.

Rating Scale:

4.51-5.00: Very satisfied

3.51-4.50: Satisfied

2.51-3.50: Neutral

1.51-2.50: Slightly dissatisfied

1.00-1.50: Dissatisfied

User Interviews

Evaluate user experiences, functional effectiveness, and aesthetic appeal.

3.3.3 Development of Research Tools

1. The implementation of this stage involves the following steps:

Study of Related Theories and Documents:

Information was gathered from fieldwork, observations, and interviews to develop a questionnaire for assessing design aspects. This process was guided by the framework for interactive media design proposed by Sumitra Sriviboon (2014), emphasizing the creation of interactive experiences that effectively engage users.

Verification and Quality Assessment:

The developed assessment tool was reviewed by academic advisors to ensure content validity. Subject matter experts evaluated the tool to determine the Index of Objective Congruence (IOC) between the questions and the research objectives/framework (Thanin Rattanawong, 2022). Three experts conducted the quality assessment:

Asst. Prof. Dr. Thanate Piromgarn

Asst. Prof. Dr. Sittichai Charoensethasitp

Asst. Prof. Dr. Panthip Wanichjirattikan

The experts examined the comprehensiveness of the content and provided feedback based on the following scale:

+1: The question clearly measures the relevant content, definition, or objective.

0: Uncertainty about whether the question measures the intended content, definition, or objective.

0: Uncertainty about whether the question measures the intended content, definition, or objective.

-1: The question does not measure the relevant content, definition, or objective.

The results of the evaluation were calculated using the following formula:

$$IOC = (\sum R) / N$$

R represents the score from each expert for a particular question.

IOC means Index of consistency between the question and the content/objective.

R means the result of the recommendations from each expert in that item.

$\sum R$ means the sum of the scores from all experts in that item.

N means the number of experts.

An IOC question from 0.5 and above indicates that the question is consistent with the content/objective.

3. Use the quality-checked satisfaction questionnaire to collect data from the sample group mentioned above.

3.3.4 Data Collection

Expert Questionnaire: Conduct interviews with the selected group of 15 experts and practitioners to gather comprehensive data on the traditional craftsmanship of She inkstones.

Observations: Document the production processes and artistic features of She inkstones through on-site observations.

3.3.5 Data Analysis

Quantitative Analysis: Analyze the frequency and consistency of responses from the expert interviews to identify common themes and patterns in the traditional craftsmanship of She inkstones.

Qualitative Analysis: Summarize the insights gained from the expert interviews and observations to provide a detailed description of the traditional craft techniques and their cultural significance.

CHAPTER 4

EXPERIMENTAL RESULT

This study focused on the historical and cultural background of She inkstones, modern product redesign, and user satisfaction evaluation. By combining qualitative and quantitative research methods, including literature review, expert interviews, field investigation, and user surveys, the project systematically analyzed the evolution, symbolic meaning, and artistic value of She inkstones from the Qing Dynasty. These findings were then used to inform the development of modern cultural and creative products that preserve traditional craftsmanship while meeting contemporary aesthetic and functional demands. In particular, the redesigned inkstone prototype incorporates iconic visual elements—such as dragon and cloud patterns—into a portable, multifunctional structure made from modern materials. A user-centered evaluation involving young consumers further validated the design’s appeal and provided valuable feedback for refinement. The following is a brief summary of each section:

4.1 Analysis Results of the History, Culture, and Cultural Creative Design of She Inkstone

4.2 Analysis Results of the Cultural and Creative Product Design of She Inkstone

4.3 Analysis of Satisfaction Survey Results on Contemporary Inkstone Product Design

4.1 Analysis Results of the History, Culture, and Cultural Creative Design of She Inkstone

4.1.1 Data Analysis Results of the Research on the History, Art, Culture, and Product Design of She Inkstone

During field investigations, museums with extensive collections were selected for on-site research. Using high-resolution imaging, 3D scanning, and other technical methods, detailed data were collected on the forms, decorative patterns, and craftsmanship of inkstones, resulting in a primary database of physical artifacts. Simultaneously, three in-depth offline interviews were conducted with experts (total duration: 4.5 hours, including follow-up questions). The interviews were transcribed and meticulously proofread, generating approximately 30,000 words of textual data. These transcripts capture the experts’ professional interpretations of the Qing Dynasty She inkstone craftsmanship in terms of “form” (structural design), “technique” (carving methods), and “spirit” (cultural connotations). Based on this foundation, a comprehensive database of Qing Dynasty She inkstone craftsmanship was constructed by integrating historical documents, craft diagrams, and oral history sources. Textual analysis was conducted on 12 key historical texts (such as Shezhou Yanpu, Shiyin Yantan, Yanshi, and Sheyan Jikao), with a focus on annotating information related to

stone material origins, carving schools, and representative case studies.

During the field investigation, this study conducted a systematic observation of Qing Dynasty She inkstones housed in institutions such as the Huizhou History Museum and the Huizhou Culture Museum. Based on a pre-established observation checklist, the craftsmanship characteristics and cultural connotations of the inkstones were analyzed from four dimensions: form, decorative patterns, material, and inscriptions.

Table 4. 1

She Inkstone Element Extraction


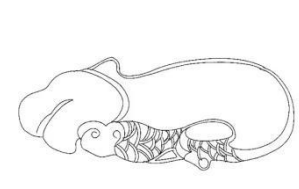

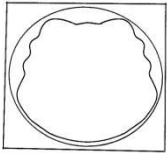

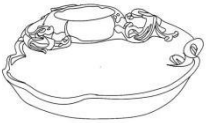



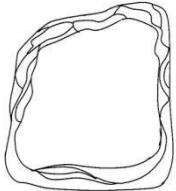

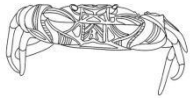

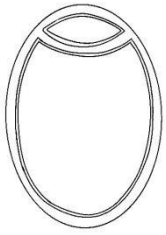



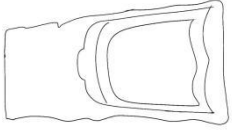





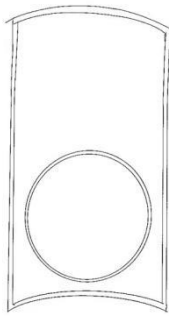
Name of She Inkstone	Image	Pattern extraction
Turtle-Fish Shaped She Inkstone		
Cicada-Shaped Hand Warmer Inkstone		
Lotus Leaf Shaped		
Irregular Shaped Lushi Stone Inkstone		


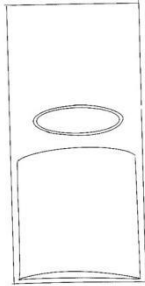



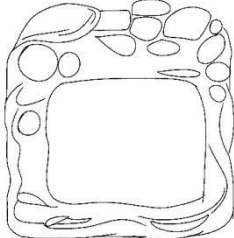

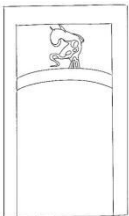
Table 4.1(Continued)

She Inkstone Element Extraction

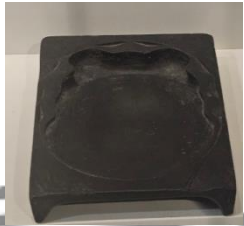
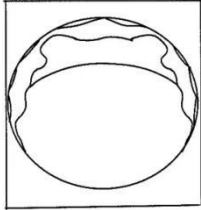



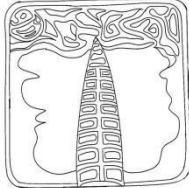

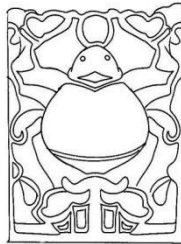
Name of She Inkstone	Image	Pattern extraction
Eyebrow-Patterned She Inkstone Made of Zishi Stone		
Crab-Shaped Bronze Ink Dropper		
Imperial Qianlong Inscription Waist-Rounded She Inkstone		
Three-Legged Cicada Shape		

<p>Tongue-Shaped Deep Ink Pool</p>		
<p>Eighteen-Legged Biyong Celadon Inkstone</p>		
<p>Sleeping Duck Shaped She Inkstone</p>		
<p>Freeform "Rhinceros Gazing at the Moon" Inkstone</p>		
<p>Freeform "Purple Robe" Inkstone</p>		

<p>Trapezoidal Han Brick Inkstone</p>		
<p>Vase-Shaped She Inkstone</p>		
<p>Natural-Shaped She Inkstone with "Hongfan" Inscription</p>		
<p>Tile-Shaped She Inkstone with Inscription</p>		

<p>Rectangular Eyebrow- Patterned She Inkstone with Oval Ink Pool</p>		
<p>She Inkstone with "Bodhidharma Washing the Elephant" Motif</p>		
<p>Freeform Pebble- Patterned She Inkstone</p>		
<p>"Hero Standing Alone" Hand Warmer She Inkstone</p>		

<p>Freeform Inkstone in the Shape of Melons and Fruits</p>		
<p>Cicada-Shaped She Inkstone</p>		
<p>Xiangcheng Clay Inkstone</p>		
<p>Rectangular Eyebrow-Patterned She Inkstone with the Inscription "Stars and Moon Shine Together"</p>		
<p>Rectangular Eyebrow-Patterned Hand Warmer Inkstone</p>		

<p>Rectangular She Inkstone with Ruyi-Shaped Edges</p>		
<p>Rectangular She Inkstone with Cloud Patterns</p>		
<p>Rectangular Right- Angled Fossil Inkstone</p>		
<p>Spider-Shaped Rectangular Inkstone</p>		

The design of the inkstone forms exhibits diverse characteristics. Firstly, there is a wide variety of biomimetic shapes. The chart presents numerous She inkstones with bionic forms, such as the Turtle-Fish Shaped She Inkstone, Crab-Shaped Bronze Ink Dropper, and Sleeping Duck Shaped She Inkstone. These inkstones vividly mimic the shapes of creatures from nature. The Turtle-Fish Shaped She Inkstone skillfully integrates the form of the creature into the inkstone body, showcasing the artisan's precise grasp of biological structures and imbuing the inkstone with a lively charm. The

Crab-Shaped Bronze Ink Dropper, through its detailed depiction of a crab's form, perfectly combines practical functionality with artistic modeling, reflecting a unique sense of creativity.

Traditional classic styles are also well represented, such as the Cicada-Shaped Hand Warmer Inkstone and the Rectangular Eyebrow-Patterned Hand Warmer Inkstone. These conventional forms of She inkstones are characterized by their clean, structured appearance and smooth lines. The layout of the inkstone surface and ink pool is ergonomically designed for ease of use, while also reflecting the traditional literati's pursuit of simplicity and dignified aesthetics. For example, the Imperial Qianlong Inscription Waist-Rounded She Inkstone builds upon the classic form by introducing a rounded waist, adding elegance and uniqueness to the traditional shape.

Meanwhile, the natural beauty of freeform designs is exemplified in pieces such as the Irregular Shaped Lushi Stone Inkstone, Freeform "Rhinoceros Gazing at the Moon" Inkstone, and Freeform "Purple Robe" Inkstone. These inkstones make full use of the natural shape of the stone, with minimal artificial carving, following the stone's natural contours. This design approach preserves the material's inherent beauty to the greatest extent and embodies the traditional Chinese aesthetic philosophy of harmony between humans and nature ("Tian Ren He Yi"). As a result, each freeform She inkstone possesses a one-of-a-kind appearance.

The decorative patterns reflect strong cultural characteristics. Firstly, traditional auspicious motifs are employed. Some She inkstones are adorned with classic auspicious patterns such as cloud motifs and dragon motifs carved along the edges or specific sections of the inkstones. The flowing cloud patterns symbolize elevation and good fortune, while the dragon motifs represent power and nobility. These designs, rendered through skilled carving techniques, imbue the inkstones with a sense of mystery and solemnity, expressing the users' aspirations and blessings for a better life.

Secondly, some designs draw inspiration from cultural stories. For instance, the She inkstone featuring the "Bodhidharma Washing the Elephant" motif demonstrates the integration of narrative themes into decoration. By depicting such culturally rich scenes through carving, the inkstone transcends its practical function as a scholar's tool to become a vessel for cultural inheritance and communication, endowed with artistic charm and cultural value.

Meanwhile, minimalistic linear decorations are also used. Some She inkstones, such as the Rectangular Eyebrow-Patterned Hand Warmer Inkstone, feature simple line patterns. These clean, understated lines highlight the elegance and refinement of the inkstone, aligning with its overall classic and graceful character. This approach also reflects the traditional literati's aesthetic preference for restraint and subtlety.

In terms of inscriptions and cultural symbolism, She inkstones embody both

historical prestige and rich cultural meaning. Some inkstones feature inscriptions by prominent figures, such as the Imperial Qianlong Inscription Waist-Rounded She Inkstone, where the emperor's words not only enhance the inkstone's rarity but also imbue it with deep historical and cultural value. These inscriptions often reflect the sentiments, aesthetic values, and cultural ideals of their authors, transforming the inkstone into a vessel of heritage and a testament to the past. Additionally, the patterns and forms of certain inkstones themselves carry symbolic meanings. For example, the Cicada-Shaped Hand Warmer Inkstone draws from the cicada's traditional symbolism in Chinese culture—representing purity and integrity. Such symbolism aligns closely with the scholarly spirit that inkstones have long represented, making them not merely practical tools, but cultural icons that embody the moral values and intellectual aspirations of the literati.

Through the observation of physical artifacts, the research team found that the craftsmanship essence of Qing Dynasty She inkstones lies in the unity of “form,” “technique,” and “spirit.” The design of forms adheres to traditional paradigms while embracing biomimetic innovation; decorative patterns fuse Huizhou aesthetics with the refined taste of the literati; material processing pursues carving excellence while preserving the natural qualities of the stone; and inscriptions endow the inkstone with a dual identity as both a functional tool and a cultural symbol. These findings, triangulated with insights from expert interviews and historical literature, collectively support the core theme of “the cultural genes and contemporary translation path of Qing Dynasty She inkstone craftsmanship,” providing tangible historical references and technical inspiration for future design refinement.

4.1.2 Analysis Results of Interviews with Historians and Art and Culture Scholars from the She Inkstone Museum

Using NVivo 12, the study applied an inductive analysis approach to conduct three levels of coding on qualitative data.

In the open coding stage, initial concepts were extracted from interview transcripts and observation notes—such as “ink-enhancing quality of golden star stone,” “layered depth of openwork carving,” and “narrativity of literati inscriptions”—resulting in 72 basic nodes.

During the axial coding stage, these nodes were logically clustered into five subcategories: “Material and Craftsmanship,” “Decorative Art,” “Cultural Symbols,” “Challenges in Heritage Transmission,” and “Strategies for Modern Translation.” A relational model was built to link craftsmanship elements with cultural value.

In the selective coding stage, the core research theme—“The Cultural Genes and Contemporary Translation Path of Qing Dynasty She Inkstone Craftsmanship”—was refined. This revealed key traditional principles such as “crafting according to the

material” and “expressing meaning through form,” which offer insights for contemporary design practices.

To ensure coding validity and reliability, the study employed consistency checks, theoretical saturation analysis, and triangulation. Two independent coders (a graduate student and an intangible cultural heritage inheritor) performed cross-coding on 30% of the sample, yielding a Kappa coefficient of 0.89 ($p < 0.001$; Landis & Koch, 1977). No new categories emerged in five newly added samples, indicating 92% theoretical saturation. Moreover, the coding overlap among interview data, artifact observations, and historical literature reached 78%, confirming the reliability of the findings. For example, the coding on the “symbolism of cloud patterns” showed a 91% match between expert interviews and records from Shiyin Yantan. These results collectively underscore the robustness of the data structure and the credibility of the thematic interpretations drawn from the qualitative analysis.

Table 4. 2
Three-Level Coding Table of Primary Data

Raw Interview Data	Open Coding	Axial Coding	Selective Coding
<p>In the Qing Dynasty, imperial She inkstones were crafted with great care in material selection. Laokeng stones, known for their smooth texture and fine ink performance, were often sourced from specific mineral veins. Artisans preserved natural patterns in the stone, skillfully shaping them into imagery like starry skies or landscapes, blending material traits with cultural symbolism. (ZX01)</p>	<p>Laokeng stone standards, material-based carving, natural pattern design, and imperial inkstone material rules.</p>	<p>Material & Craftsmanship</p>	<p>Cultural Genes and Modern Translation Path of Qing Dynasty She Inkstone Craftsmanship</p>

<p>Traditional openwork carving emphasizes layered depth, using multiple steps to create surface, mid-level, and hollowed effects. In themes like “Eight Immortals Crossing the Sea,” figures and space are carved within limited thickness. Despite modern tools, the fine texture of hand carving remains core to traditional craftsmanship. (ZX01)</p>	<p>Openwork layers, hand-carving value, craft contrast, 3D techniques.</p>		
<p>In the Qing Dynasty, inkstone inscriptions often combined with calligraphy, turning literati engravings into cultural symbols. Exhibitions recreate the carving process to reveal the inkstone’s deeper role as a vessel of scholarly spirit. (ZX02)</p>	<p>Inscription meaning, art fusion, cultural symbols, exhibit storytelling.</p>	<p>Cultural Symbols</p>	
<p>Qing inkstone inscriptions reflect ideas like the “usefulness of uselessness,” showing the inkstone’s dual role as tool and symbol. Modern design can use digital tools to link these stories and enrich cultural experience. (ZX03)</p>	<p>Inscriptive philosophy, dual role, digital tools, experience innovation.</p>		

<p>We adapted classic Qing inkstone forms into modern products, like turning a traditional inkstone into a desktop organizer with Huizhou-style patterns. The design is both practical and culturally recognizable, and market response shows it is well accepted. (ZX02)</p>	<p>Form shift, pattern trim, product ideas, daily fit.</p>	<p>Modern Translation Strategies</p>	
<p>Qing Dynasty She inkstone patterns often drew from Huizhou art, like architectural outlines and literati painting styles, shown through shallow relief with flowing, rhythmic lines. This “simplicity within complexity” aesthetic still inspires modern regional cultural product design. (ZX03)</p>	<p>Huizhou style, relief rhythm, literati taste, local symbols.</p>	<p>Decorative Art</p>	
<p>To address resource limits, the team found new stone sources and adjusted carving methods to fit the material, showing the craft’s adaptive wisdom and supporting sustainable heritage. (ZX01)</p>	<p>Stone reuse, material adaption, craft revival, new strategies.</p>	<p>Heritage Challenges and Innovation</p>	

<p>She inkstone heritage needs collaboration—like labs with universities and studios—to apply digital tech in restoration and research, preserving history while improving efficiency and blending tradition with modern tools. (ZX02)</p>	<p>Collab model, digital tools, inkstone restoration, craft revitalization.</p>		
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From the coding results, it is evident that in terms of material and craftsmanship, Qing Dynasty She inkstones consistently embodied the principle of “crafting according to the material.” In material selection, Laokeng stones were preferred for imperial inkstones due to their smooth texture and superior ink absorption. For example, many pieces in the Palace Museum use the natural stone patterns to create imagery of starry skies and landscapes, naturally fusing material properties with cultural symbolism. The carving techniques demonstrate exceptional craftsmanship—traditional openwork carving achieves a layered effect through multiple steps involving surface outlines, mid-level textures, and deep hollowing, even within the limited thickness of an inkstone’s edge, as seen in themes like “Eight Immortals Crossing the Sea.” While modern machinery has improved production efficiency, the refined texture of hand carving remains the irreplaceable essence of traditional craftsmanship. This deep understanding of material and refined mastery of technique are not just means of function, but the very core of craft heritage—offering insight for modern design to return to the essence of materials and make craftsmanship a foundation for cultural expression.

In the cultural symbol dimension, Qing She inkstones served as dual carriers of the literati spirit. Inscriptions by scholars like Zheng Banqiao combined calligraphy with carving, forming an integrated design of “poetry, calligraphy, and inkstone.” Exhibitions that reconstruct the carving process help reveal the deeper meaning of inkstones as vessels of scholarly ideals. The philosophical meanings of famous inkstone inscriptions in the Qing Dynasty further reflect the inkstone’s dual nature as both a practical tool and a spiritual symbol. Modern design, by leveraging digital technology to connect users with the historical narratives behind inkstones, continues the inkstone’s role as a storytelling symbol—giving traditional motifs new interpretive dimensions in contemporary contexts and elevating cultural experiences from the physical to the

spiritual level.

In the area of decorative art, Qing She inkstones deeply integrated Huizhou aesthetics. They drew from Huizhou architecture and the expressive brushwork of literati painting, using shallow relief techniques to produce flowing, rhythmic lines. For instance, patterns such as “literati gatherings” convey aesthetic rhythm through concise strokes, embodying the literati’s pursuit of “simplicity within complexity.” This style not only refines regional cultural symbols but also proves that traditional artistic elements can be adapted to modern aesthetics. For contemporary cultural product design, the decorative art of Qing She inkstones provides a rich source of inspiration. The key lies in translating classical aesthetic genes into modern visual language, bridging traditional and contemporary beauty.

Regarding heritage challenges and innovation, the craftsmanship of Qing She inkstones reveals great adaptability. In response to dwindling stone resources, the research team explored new veins and adjusted techniques to suit new materials, embodying the traditional wisdom of “adapting to the material.” This provides practical experience for sustainable heritage. At the same time, a collaborative model involving museums, universities, and studios applied digital technology to the restoration and study of antique inkstones, enhancing the efficiency of transmission while preserving historical features. This innovative path—combining traditional wisdom with modern technology—not only safeguards the authenticity of craftsmanship but also offers a new paradigm for revitalizing traditional techniques in contemporary contexts. It marks a shift in mindset from “preserving the past” to “creating the future.”

In the practice of modern translation strategies, the traditional forms of Qing She inkstones have been revitalized in cultural product design. For example, the simple lines of a classic Tangchi inkstone were transformed into a modern desktop organizer, with simplified Huizhou architectural motifs decorating the edges. This design retains the cultural recognizability of the traditional form while giving it new practical functions. Such innovation breaks the perception of She inkstones as “niche collectibles” by translating their functions into contemporary life. Its success demonstrates that modern translations of traditional crafts must balance cultural essence with practical needs. Through “new uses for old forms,” it builds a bridge between tradition and modernity, achieving a dynamic balance between cultural inheritance and market demand—offering a replicable model for the living transmission of traditional craftsmanship.

4.1.3 Analysis of She Inkstone Product Design

From the perspective of modern product design, the basic design elements of She inkstones include their function, appearance, material, and technical processing. The function of the She inkstone is its most fundamental aspect as a product, and also one of the key factors attracting consumers. As an inkstone, its primary function is to grind and store ink for writing and painting. In ancient times, the inkstone was a lifelong

companion to scholars. Mi Fu, a renowned calligrapher of the Song Dynasty, was infatuated with inkstones throughout his life and wrote the book *History of Inkstones*. He was so fond of his treasured inkstones that he would hold them even while sleeping. Jin Nong, one of the famous “Eight Eccentrics of Yangzhou” during the Qing Dynasty, nicknamed himself “The Wealthy Owner of 120 Inkstone Fields” and “Old Man of 100 Inkstones.” He exhausted his entire fortune collecting fine inkstones. A good inkstone produces ink quickly without damaging the brush, and the ink stored in the inkstone can remain fresh for several days without deteriorating.

With the advancement of modern technology and the emergence of high-tech products, bottled ink has gradually replaced ink sticks, making it possible to write directly by dipping the pen, thus diminishing the traditional function of the inkstone. Writing habits have also changed significantly: today’s pens are compact and portable, and the invention of computers has greatly improved writing efficiency. As a result, modern consumers primarily purchase inkstones for their collectible value. Inkstones are precious relics of traditional culture. Collectors value them in various ways: some are drawn to the color and texture, others focus on collecting different types of stone, and still others concentrate solely on ancient inkstones. There are also collectors who prioritize unique creativity and the distinctive craftsmanship of renowned artists.

The value appreciation of an inkstone depends on several key factors: first, whether it is created by a renowned artist; second, whether the stone has extraordinary color and texture; and third, whether the design is ingenious and the carving is meticulous. There are three main criteria for determining the price of an inkstone: The quality, shape, size, and grade of the stone; The creative design of the inkstone; The craftsmanship—what is commonly referred to as carving skill and blade technique.

Besides the aforementioned functions, She inkstones also serve as tourist souvenirs and gifts. As a specialty product of Huizhou, She inkstones have a long history and are the result of both natural and cultural environments of the region. In production areas such as the Huangshan region—an important tourist destination in China—there are many domestic and international visitors daily, and they often purchase local souvenirs. Tunxi Old Street in Huangshan City is a well-known street for selling local specialty products, with a notable portion dedicated to the sale of the Four Treasures of the Study, including She inkstones. Due to their historical and cultural significance, they are often used as high-end gifts in business exchanges and even presented as state gifts.

Since they are traditional artifacts whose fundamental functions have diminished over time, developing diversified additional functions to meet the needs of new generations and modern consumers can significantly enhance their market potential.

The perfect unity of artistic content and form is a necessary condition for the aesthetic beauty of an artwork. The artistic beauty of She inkstones lies not only in their

function but also in the expression of their appearance. The appearance of She inkstones primarily includes three aspects: the overall shape, also referred to as the silhouette or outline; the carving techniques and styles; and the decorative themes.

The evolution of inkstone shapes has gone through a process from natural forms to standardized models, and then back toward nature-inspired forms. Early inkstones were made from natural pebbles, retaining the natural shape of the stone. By the Song Dynasty, which saw the maturity of inkstone craftsmanship, both the shape and dimensions were regulated and standardized. This shift reflected the increasing importance of aesthetic harmony and scholarly refinement in Chinese culture. Over time, these standardized shapes laid the foundation for future innovations that reintroduced natural elements in more deliberate and artistic ways. The inkstones currently available on the market are mostly round or square. The shape design of She inkstones particularly emphasizes adapting to the stone's natural form, decorating according to the shape, and applying techniques that complement the stone's features. In summary, there are four basic shapes: Regular Shapes (see Figure 4-1): These are shapes based on set proportions and measurements, such as traditional rectangles, squares, human-face shapes, "wind" character shapes, perfect circles, and ovals. They are characterized by standardization, symmetry, and precision. The patterns are often consistent and commonly produced in batches. Natural Shapes (see Figure 4-2): These are irregular organic shapes processed by hand, with a spontaneous and lively appearance. Object-inspired Shapes (see Figure 4-3): These inkstones imitate the forms of tools, animals, or plants, such as moon shapes, Han tiles, cicadas, oxen, leaves, etc. Natural Unprocessed Shapes (see Figure 4-4): These inkstones retain their natural appearance with minimal artificial modification, presenting a fully organic form.



Figure 4. 1
Regular shapes
(Picture source: by the author)



Figure 4. 2
Natural shapes
(Picture source: by the author)



Figure 4. 3
Object-inspired shapes
(Picture source: by the author)



Figure 4. 4
Natural unprocessed shapes
(Picture source: by the author)

In terms of design themes, traditional She inkstones often feature motifs such as “Nine Like Treasures from Heaven”, “Peaceful Elephant”, “Five Sacred Mountains Paying Tribute to Heaven”, “Dragon and Horse Offering the Map”, as well as decorative patterns like fretwork, dragon motifs, and cloud-and-thunder patterns. In recent years, however, these traditional themes have gradually declined, giving way to designs featuring landscapes, human figures, and other subjects.

The carving techniques of She inkstones are significantly influenced by the physical characteristics of the material—namely, the layered nature of the stone, which makes it prone to flaking—and by the expressive, freehand style of the Xin’an Painting School. As a result, shallow relief and line carving are often employed, emphasizing decorative appeal over technical complexity. Great attention is paid to the use of natural stone features, such as shape and color, in a method known as “skillful shaping and color enhancement”, where minimal processing allows natural textures to blend seamlessly with artificial patterns.

Today, the transmission of inkstone carving techniques primarily follows the traditional master-apprentice model, with little emphasis on formal academic training or design theory. The quality of artistic understanding and cultural literacy varies greatly among practitioners, leading to the partial loss of certain traditional techniques. Many mid- to low-end products on the market are highly repetitive or even outright copies of existing works. The modeling and decoration of She inkstones are often based on existing pattern books, resulting in little innovation in form or motif despite over a thousand years of production history. This lack of originality is one of the main reasons why modern, style-conscious young people show limited interest in She inkstones.

Moreover, there is a noticeable absence of professionally trained modern designers within the She inkstone industry. As such, contemporary cultural elements and modern design techniques are nearly absent from current product offerings. In contrast, today’s

industrial products are designed to capture public attention and reflect contemporary sensibilities. They constantly explore new design styles and methods that integrate tradition with the spirit and aesthetics of the times. Admittedly, integrating modern elements into a traditional craft is a difficult and even risky endeavor, yet many successful cases can serve as inspiration.

One notable example is the Yixing Zisha (purple clay) teapot, another traditional craft with a long history and established design conventions. Wu Guangrong, a contemporary master of Zisha teapot craftsmanship and the author of *Seeking the Future*, introduced two innovative designs. One features a twisted, bun-like spout that offers a fresh visual impression and boldly employs biomimetic design techniques from modern design theory. The other involves throwing the clay body onto the ground to create a randomly deformed shape before firing, resulting in a final product that resembles a drunken man standing—a playful gesture reminiscent of pop art. These innovations received strong market responses, and Wu's works are highly valued by collectors in both China and Japan.

The value of a She inkstone is also deeply tied to the quality of its material, which plays a decisive role in determining its price. The physical properties, varieties, and ornamental textures of She stone are discussed in detail in Chapter 2, but here we propose some reflections on the future direction of its material market. According to experienced artisans at She inkstone factories, current estimates suggest that the remaining reserves of She stone are only sufficient for another five years of mining. Without effective planning, the supply may be depleted even sooner. Fortunately, some factories still have stockpiles that can support about twenty more years of production. Once these are exhausted, high-quality She inkstones will become extremely difficult to produce, and substitute stones are unlikely to match the quality of the original.

This concern is shared by many individuals involved in the production and sale of She inkstones whom the author interviewed. As a non-renewable resource, She stone is bound to run out—especially considering that it has been mined for over 1,300 years. The eventual depletion of premium stone is inevitable. The decline of the once-famous Red Silk Inkstone from Shandong serves as a precedent: it disappeared from the market after its source stone became unavailable.

Faced with this reality, some valuable insights may be drawn from the perspective of modern design. The She inkstone has become an internationally recognized brand not only because of the beauty of its material but also due to the deep cultural legacy and tireless efforts of its artisans. Material is just one aspect of a product; together with other design elements, it shapes the product's identity. Throughout history, many products have achieved renewed success precisely because of innovations in materials. For example, classical furniture was traditionally made of wood, but faced issues such as labor-intensive processing, bulky forms, and high cost. As technology advanced,

plastic and other synthetic materials began to be used in furniture-making, offering advantages that wood could not—thus revitalizing the industry.

The challenge of material selection can be approached from multiple angles (as discussed in Section 3 of this chapter), but must always adhere to modern design principles, such as low cost, environmental friendliness, renewability, and production feasibility.

4.2 Analysis Results of the Cultural and Creative Product Design of She Inkstone

4.2.1 Analysis of the Aesthetic Characteristics and Artistic Design Elements of She Inkstones

As one of China's Four Famous Inkstones, the She inkstone is revered by scholars and literati for its unique material, refined craftsmanship, and profound cultural significance. Dominated by deep bluish-black tones, it also features hues of bluish-gray and ochre-brown, presenting a calm and restrained aesthetic. Famous varieties such as "She Qing" and "Miaoqian Qing" are especially prized for their pure and rich coloration. The stone is known for its firm yet smooth and delicate texture—"as soft as a baby's skin to the touch, as sharp as a blade when grinding ink." It produces ink efficiently without damaging the brush hairs.

Artisans skillfully design according to the natural shape and texture of the stone, often preserving the natural skin or striations of the surface—for example, in "ingenious landscape carving," where natural color layers are used to express scenic depth and poetic imagery. Relief and openwork carving are the primary techniques employed, with flowing and restrained lines. The subject matter typically reflects the refined tastes of the literati, including motifs such as pine and clouds, lotus ponds, guqin (ancient zither), and archaic patterns, while avoiding excessive ornamentation.

Traditional forms like the "Chaoshou Inkstone" (arm-rest inkstone) and "Flat Inkstone" are characterized by simplicity and grandeur, embodying the philosophical aesthetic of "great skill appears clumsy"

4.2.2 Analysis of the Aesthetic Characteristics of She Inkstones

In the art of inkstone carving, decorative patterns are generally categorized into two main types. One consists of traditional stylized motifs such as qú patterns (wrinkled lines), thunder patterns, cloud patterns, continuous-branch patterns, and baoxiang floral motifs. The other includes more realistic representations, such as landscapes, flowers, fruits, insects, birds, animals, human figures, and figurative designs of dragons, phoenixes, and auspicious symbols. The use of realistic imagery has become increasingly common in the production of modern inkstones, particularly depictions of human figures such as court ladies, arhats, and Buddhist icons.

The distribution of carved motifs on the inkstone surface typically follows three main arrangements: isolated motifs, integrated motifs, and border motifs.

Isolated motifs refer to standalone patterns that are independent of surrounding elements and maintain a complete visual composition. These are usually positioned within the ink pool or at the junction between the ink pool and the ink plate. Common motifs in this category include auspicious symbols such as kui dragons, chi dragons, celestial fruits, and human figures.

Integrated motifs involve the deliberate arrangement of patterns to conform to the specific shape of the inkstone surface. This is a compositional extension of isolated motifs, in which the ink pool and ink plate are incorporated into the pattern design. This approach preserves the functional aspects of grinding, storing, and holding ink while enhancing the artistic appeal of the piece. Common shapes include circular, rectangular, and crescent (moon-shaped) forms, often paired with auspicious motifs to embody the traditional design philosophy of “every image must carry meaning, and every meaning must be auspicious.”

Border motifs are decorative patterns engraved around the edges of the inkstone surface to enhance its visual appeal. This is a widely used technique, typically executed on standard borders or raised edge sections. Frequently used motifs include fretwork, ripple patterns, auspicious cloud motifs, stylized dragon lines, baoxiang floral patterns, and scrolling branch patterns.

Overall, most inkstone carvings on the market still adhere to antique styles, with traditional auspicious symbols and classical themes—such as immortals crossing bridges over flowing streams—remaining particularly popular among middle-aged and elderly consumers. In contrast, modern urban dwellers, especially younger generations, tend to favor designs with a contemporary aesthetic, characterized by themes that reflect everyday life and modern sensibilities.

4.2.3 Design and Development of Culturally Innovative Product Concepts

The dragon motif is one of the most iconic and representative visual symbols in Chinese decorative culture. It frequently appears on ancient jade artifacts, bronze vessels, and porcelain wares, forming one of the longest-lasting, most widely used, functionally rich, and culturally embedded ornamental traditions in Chinese history. As a mythical creature, the dragon embodies the collective imagination and beliefs of the Chinese people, transcending time and dynasties. Its flexible form allows for rich artistic variation—from coiled, flying, and ascending forms to combinations with clouds, waves, or flames—making it a highly expressive design element in both ancient and contemporary contexts. The dragon pattern not only represents visual beauty but also carries layers of social, political, and ritualistic meaning.

In traditional Chinese culture, the dragon also holds various important symbolic meanings. It is often associated with wealth and good fortune, believed to bring happiness and prosperity. At the same time, the dragon symbolizes courage and determination, inspiring people to remain strong and steadfast in the face of challenges.

Based on the dragon and wind elements, the following products have been

carefully designed to integrate traditional Chinese symbolism with contemporary aesthetics, creating a unique blend of cultural heritage and modern style.

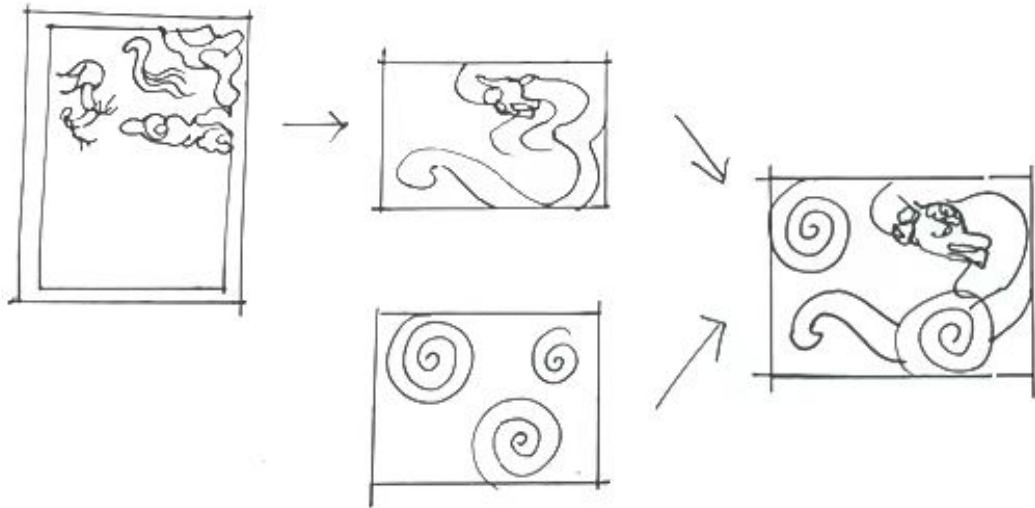


Figure 4.5
The Drawing Process of the Dragon Motif
(picture source:by the author)

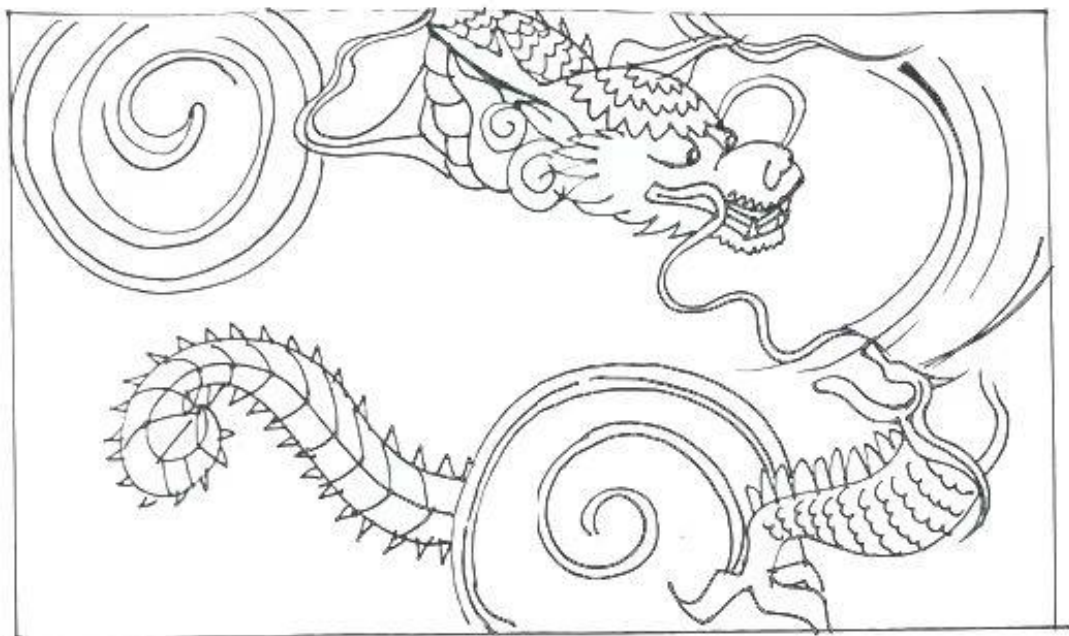


Figure 4.6
Dragon Pattern Line Sketch
(picture source:by the author)

The auspicious cloud motif is one of the most iconic and meaningful symbols in traditional Chinese decorative arts. It represents harmony, good fortune, ascension, and positive energy. Widely used in architecture, utensils, garments, and paintings, it serves as a visual embodiment of the Chinese philosophical concept of unity between heaven and humanity.

As one of the Four Famous Chinese Inkstones, the She inkstone emphasizes form-following-nature principles in its design—adapting to the natural shape of the stone and enhancing it with appropriate decoration. In this design, soft and restrained lines are extracted from traditional She inkstone forms and recomposed with auspicious cloud motifs. The composition retains the iconic outline of the inkstone while progressively incorporating cloud forms and a central emblem, reflecting traditional aesthetics of symmetry, contrast, and visual balance.

The following products are designed based on auspicious cloud motifs and She inkstone elements.

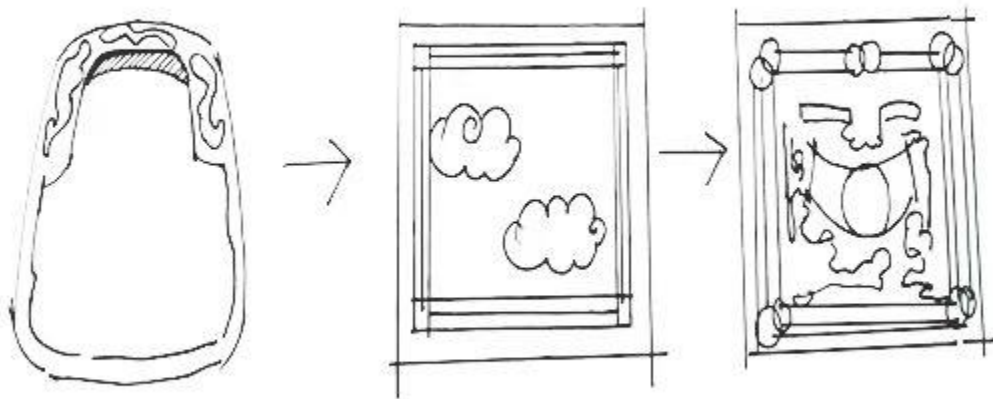


Figure 4. 7
Cloud Pattern Drawing Process
(picture source:by the author)

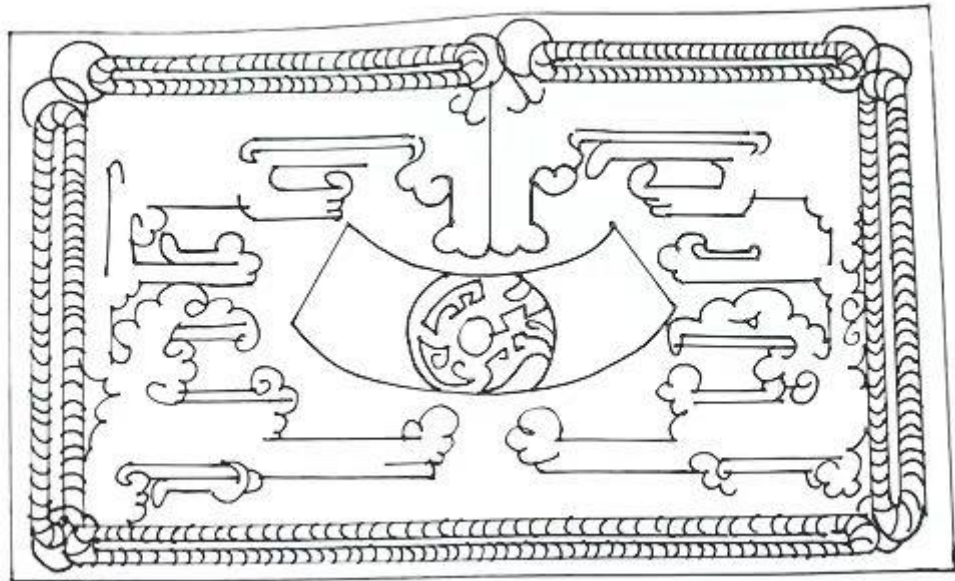


Figure 4. 8
Cloud Motif Line Sketch
(picture source:by the author)

Huizhou architecture, as a vital expression of Huizhou culture, is renowned for its iconic features such as horse-head walls, upturned eaves, and intricate brick and wood carvings. These architectural elements reflect a strong regional identity and refined craftsmanship. The decorative patterns emphasize symmetry, structure, and visual rhythm, combining practical function with artistic beauty.

This design draws inspiration from the form of the She inkstone, using it as the foundation for the overall layout. Architectural patterns from Huizhou-style window lattices and carved bricks are integrated into the visual composition. Linear structures dominate the visual language, adhering to the design philosophy of “form with meaning, meaning rooted in culture.” The central motif—plum branches and peaches—symbolizes longevity, blessings, and refined literati tastes. Complementary elements such as corner lattices and repetitive border structures lend a sense of visual balance and structural elegance.

The following products are designed based on Huizhou architectural elements and She inkstone motifs.

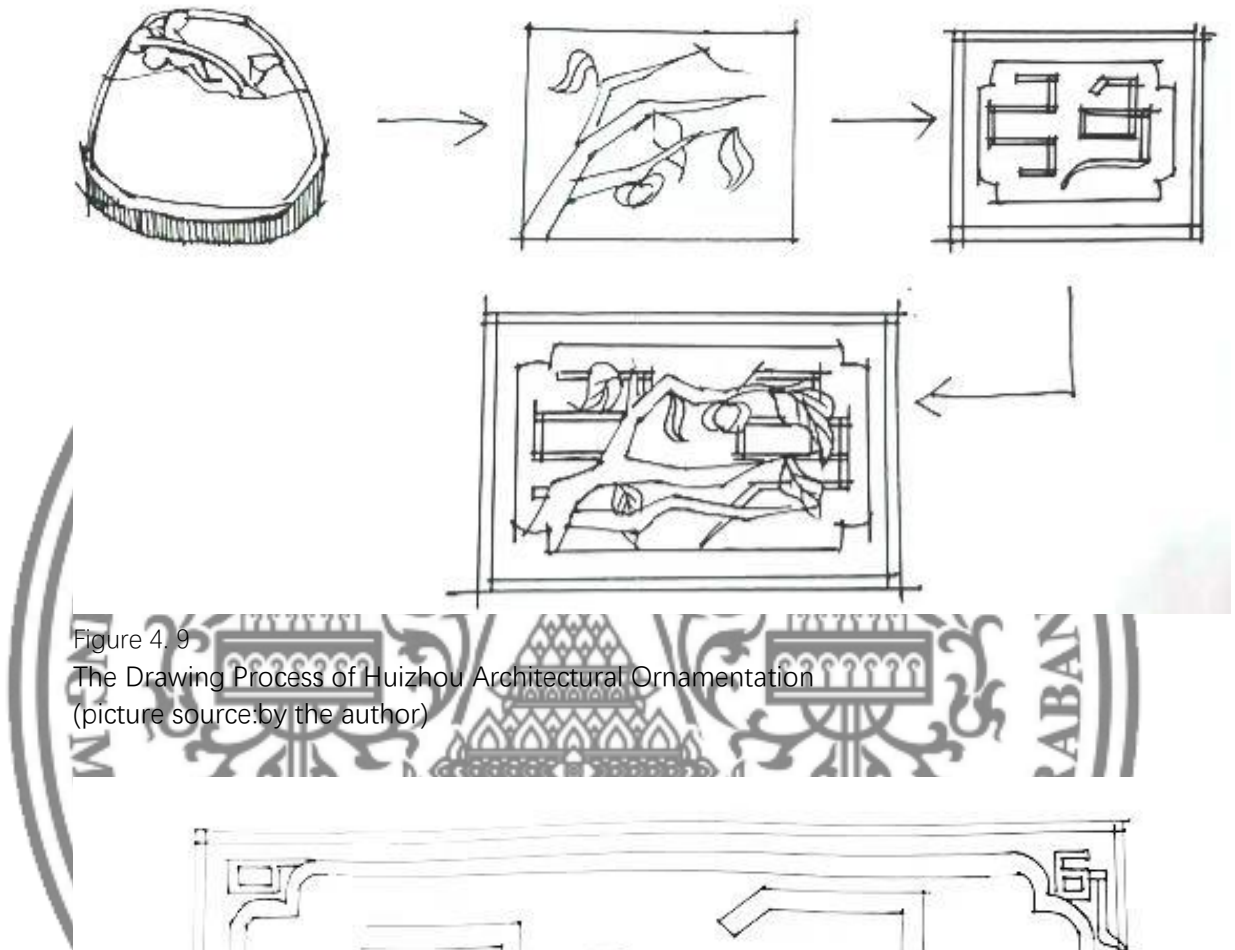


Figure 4. 9
The Drawing Process of Huizhou Architectural Ornamentation
(picture source:by the author)

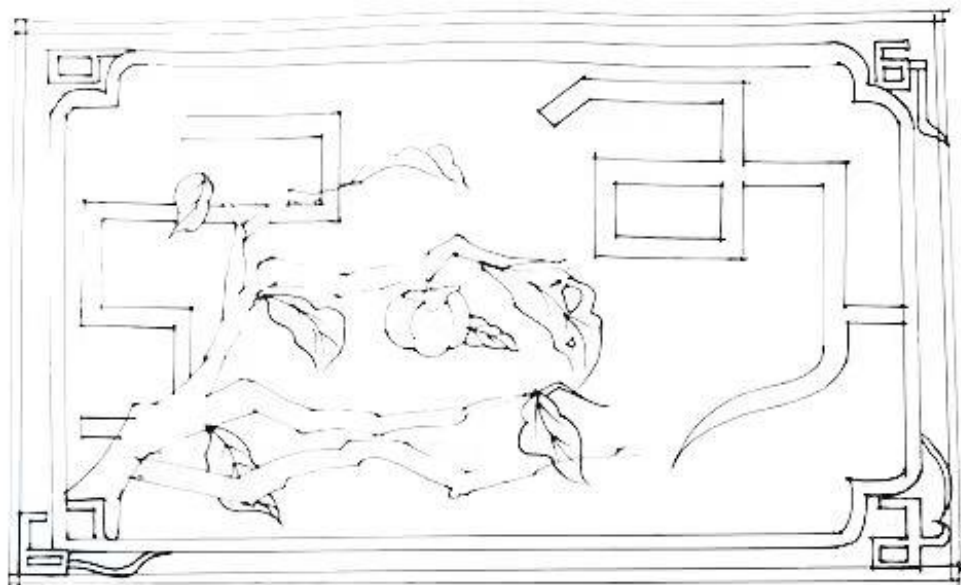


Figure 4. 10
Huizhou Architectural Motif Line Sketch
(picture source:by the author)

4.2.4 Display of Inkstone Designs

In this multifunctional She inkstone design, a deep exploration of traditional She inkstone culture is integrated with contemporary design concepts to create an innovative scholar's tool that combines both practicality and artistry. The specific design approach is as follows:

In terms of appearance, the design draws inspiration from traditional arts and natural elements to establish a unique visual language. The form is based on a square structure, with smooth and clean lines that preserve the dignified and steady nature of traditional She inkstones while incorporating a modern minimalist style. The lid is intricately carved with traditional patterns such as auspicious clouds and dragons—the clouds are graceful and flowing, while the dragons convey majesty and power. The use of delicate lines and three-dimensional carving enhances visual depth and artistic expression, allowing the inkstone to appear refined within its simplicity and to convey a profound cultural atmosphere.

In terms of element extraction, the design reflects a refined integration of nature and tradition. Branch-like forms embellished with leaves and fruits symbolize vibrant natural life and growth, infusing the inkstone with the rhythm of nature and evoking a sense of closeness and beauty. Abstracted components of traditional architecture—featuring orderly and rhythmic lines—bring a sense of structural harmony and cultural continuity. These visual elements aim to combine the dynamism of nature with the elegance of heritage, allowing the inkstone to express both aesthetic beauty and deep cultural significance. The result is a harmonious unity between appearance and meaning, offering users a unique sensory and cultural experience, and revitalizing the ancient She inkstone with new vitality in a contemporary context.

In terms of color matching, different design schemes feature either jade green or yellow as the primary color, creating distinctive visual experiences rich in cultural symbolism. Jade green conveys freshness and vitality, symbolizing life and refined cultural elegance. It highlights the graceful and subtle beauty of the inkstone, evoking a sense of purity and natural harmony. On the other hand, yellow-based designs emphasize qualities of nobility, auspiciousness, and warmth, often used to enhance the inkstone's sense of solemnity and ceremonial presence. Each color scheme offers its own stylistic expression, representing a modern interpretation of traditional Chinese color aesthetics and catering to various aesthetic preferences and application contexts.



Figure 4.11
Multifunctional She Inkstone – Version 1
(picture source: by the author)

In terms of functional expansion, the design breaks through the traditional single-purpose grinding role of the She inkstone and reimagines it as a multifunctional scholarly desktop tool.

The internal structure is carefully organized into multiple functional zones: a brush holder area provides a convenient and hygienic space for placing writing brushes; a dedicated compartment for ink stick storage ensures proper preservation; and an integrated layout allows for the organized storage of various stationery items.

The spatial arrangement is logical and user-friendly, facilitating easy access to tools during writing or painting. This design meets the need for orderly placement of multiple items, improving both operational efficiency and user convenience, and making the scholarly workspace more streamlined and effective. It enhances the overall user experience by promoting organization and reducing unnecessary interruptions during creative activities.



Figure 4.12
Multifunctional She Inkstone – Version 2
(picture source: by the author)

In terms of material and craftsmanship, ABS engineering plastic is selected as the primary material in response to the growing scarcity of She stone due to years of over-extraction. This material offers excellent workability, durability, and cost-efficiency, making it a viable alternative to traditional stone and opening up new possibilities for the modernization and wider application of She inkstones. Moreover, ABS has been widely used in a variety of industrial and cultural products, with its safety and stability well proven through long-term market validation. Notably, there are already modern inkstone products on the market made from ABS material, which have received positive feedback in terms of both functionality and visual appeal—further confirming its feasibility as a substitute material.

Regarding the processing method, traditional carving techniques are replaced with high-precision printing and application methods to attach decorative motifs—such as auspicious cloud patterns and dragon designs—onto the surface of the inkstone. This approach preserves the cultural symbolism while enhancing production efficiency and consistency.

The overall craftsmanship achieves an effective integration of traditional cultural aesthetics with modern manufacturing techniques. It ensures the visual appeal and recognizability of the product, while also offering a practical solution for the sustainable development of traditional scholarly tools in a contemporary context.

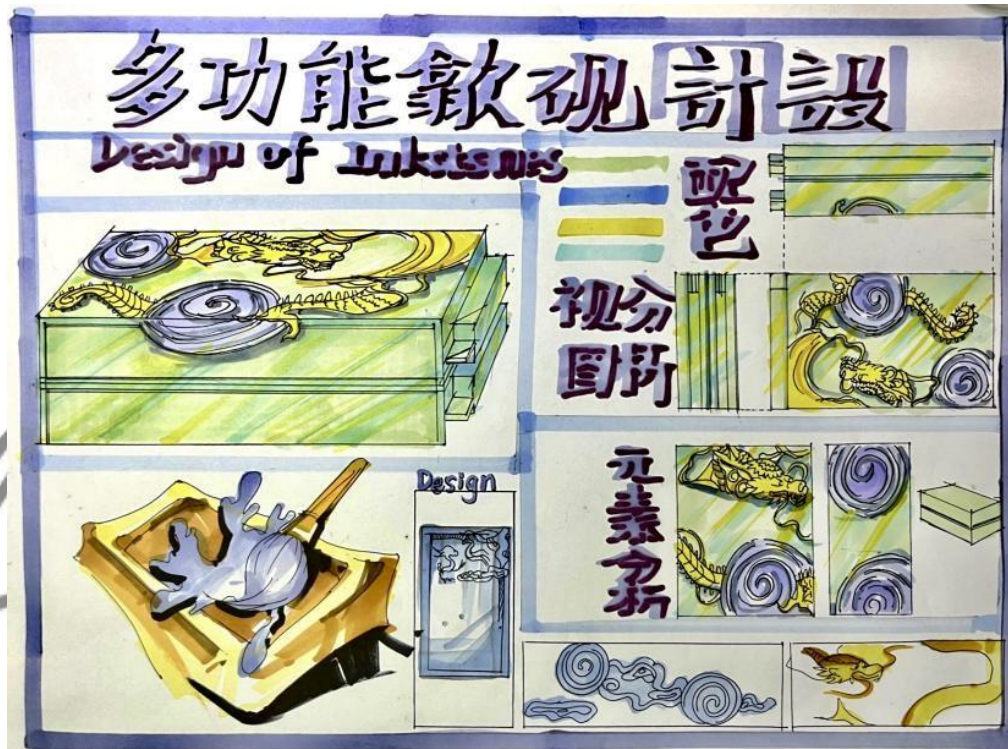


Figure 4.13
Multifunctional She Inkstone – Version 3
(picture source: by the author)



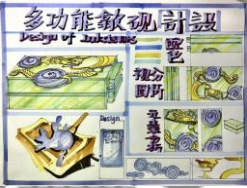
This design draws deeply from the cultural heritage of Huizhou, skillfully integrating representative cultural symbols into the form and decoration of the inkstone. The auspicious cloud motif, symbolizing ascension and good fortune, is carved around the edge of the inkstone, adding a sense of grace and harmony. The dragon motif, representing nobility and authority, is placed at the center of the inkstone lid, serving as a striking focal point. The overall structure is inspired by the minimalist lines and symmetrical aesthetics of Huizhou architecture, creating a balanced design that embodies both dignity and regional character. As a result, this She inkstone becomes a vivid cultural carrier of Huizhou tradition, evoking deep cultural resonance in its users.

The design takes into full account the diversity of market needs, aiming to balance professionalism with general appeal. For calligraphy and painting professionals, the functional layout and durable material address practical needs during the creative process, making the product a reliable tool that blends usability with artistic beauty. For general consumers and cultural enthusiasts, its elegant appearance and rich cultural meaning allow it to serve as a premium cultural gift or home décor item. With optimized production cost and reasonable pricing strategies, combined with both online and offline distribution channels, the product can reach a broader market. It demonstrates strong adaptability and commercial potential in cultural and creative markets as well as in the gift sector, transforming traditional cultural artifacts into modern market-oriented

products.

Through multi-dimensional innovation and integration in materials, form, function, and cultural symbolism, this multifunctional She inkstone achieves a successful transformation of traditional scholar's tools for modern use. It not only inherits the thousand-year craftsmanship spirit of She inkstones but also responds to the needs and aesthetics of contemporary users, offering a new path for the modernization of traditional cultural products.

Table 4. 3
Development evaluation

Detailed Information	Mode one 	Mode two 	Mode three 	Highest Score
Traditional Art and Cultural Patterns	3.9	3.9	4.1	4.1
Innovative Product Form	4.1	4.0	4.4	4.4
Overall Score	4	3.9	4.2	4.2
Rank	2	3	1	

According to the comparative expert evaluation of the three multifunctional She inkstone design proposals (Model 1: Cloud Pattern, Model 2: Huizhou Architecture, Model 3: Dragon Pattern), four dimensions were assessed: cultural relevance of the pattern, innovation in product form, total score, and overall ranking.

Model 3 (Dragon Pattern Inkstone) achieved the highest scores in both “Cultural Motif Relevance” and “Innovative Form” (4.1 and 4.4 respectively), with a total score of 4.2, ranking first among the three models. This model stands out for its rich symbolism, visual appeal, and integration of tradition with modern aesthetics, showing

greater potential for user engagement and market success.

Therefore, Model 3 is selected as the final design for development, as it best embodies the project's goal of integrating traditional cultural heritage with contemporary product design.

4.2.5 Material Properties of She Inkstone

For the purposes of sustainability and practical application, this design adopts ABS engineering plastic as the primary material for the new multifunctional She inkstone.

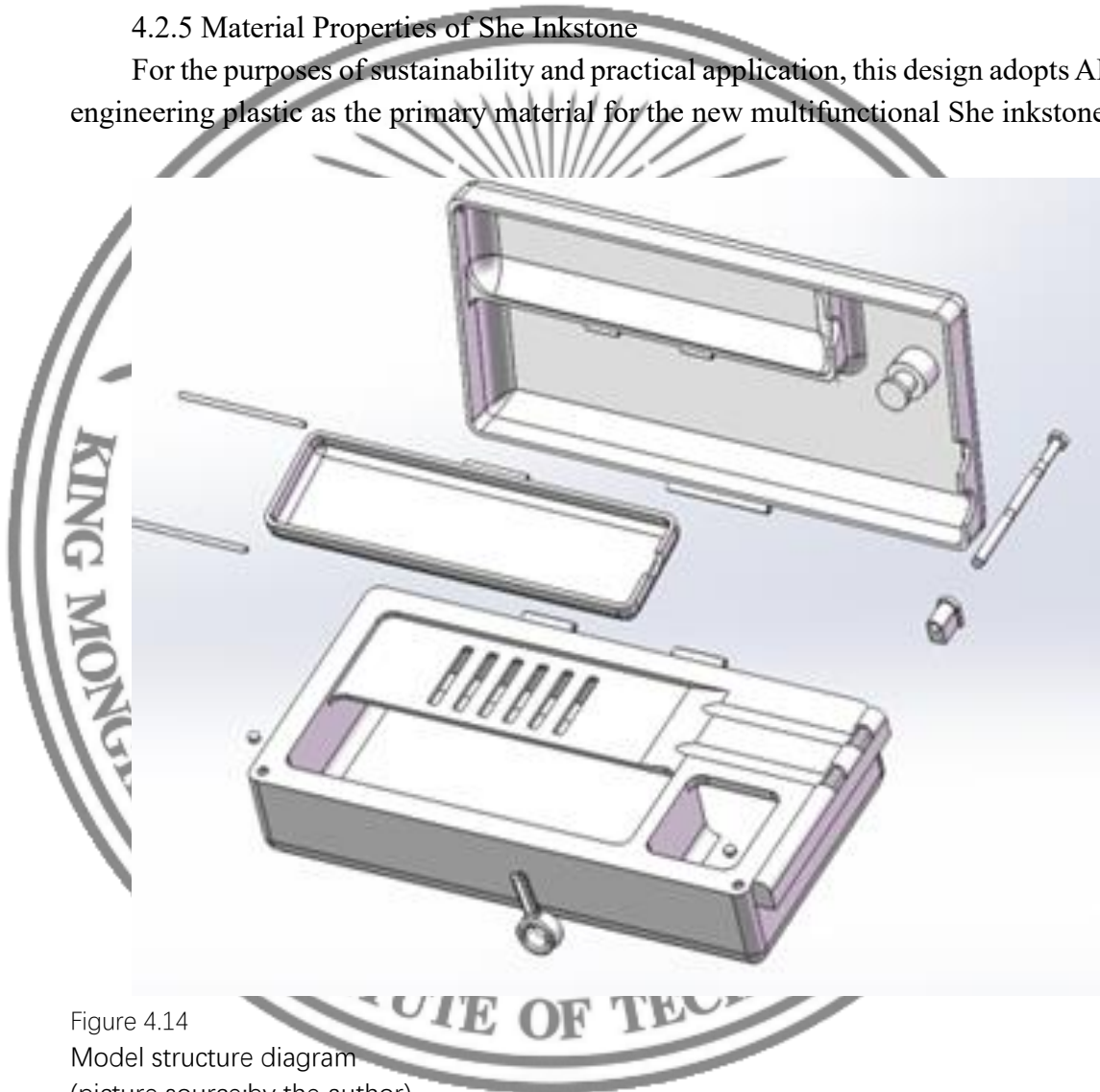


Figure 4.14
Model structure diagram
(picture source:by the author)

Firstly, natural She stone—the traditional material used in inkstones—has become increasingly scarce due to decades of over-mining. High-quality raw stone is now difficult to obtain and highly expensive, severely limiting the inkstone's accessibility and market expansion. In contrast, ABS plastic offers an ideal balance of performance and cost. It is strong, wear-resistant, easy to process, and suitable for mass production, making it highly practical for commercial cultural products.

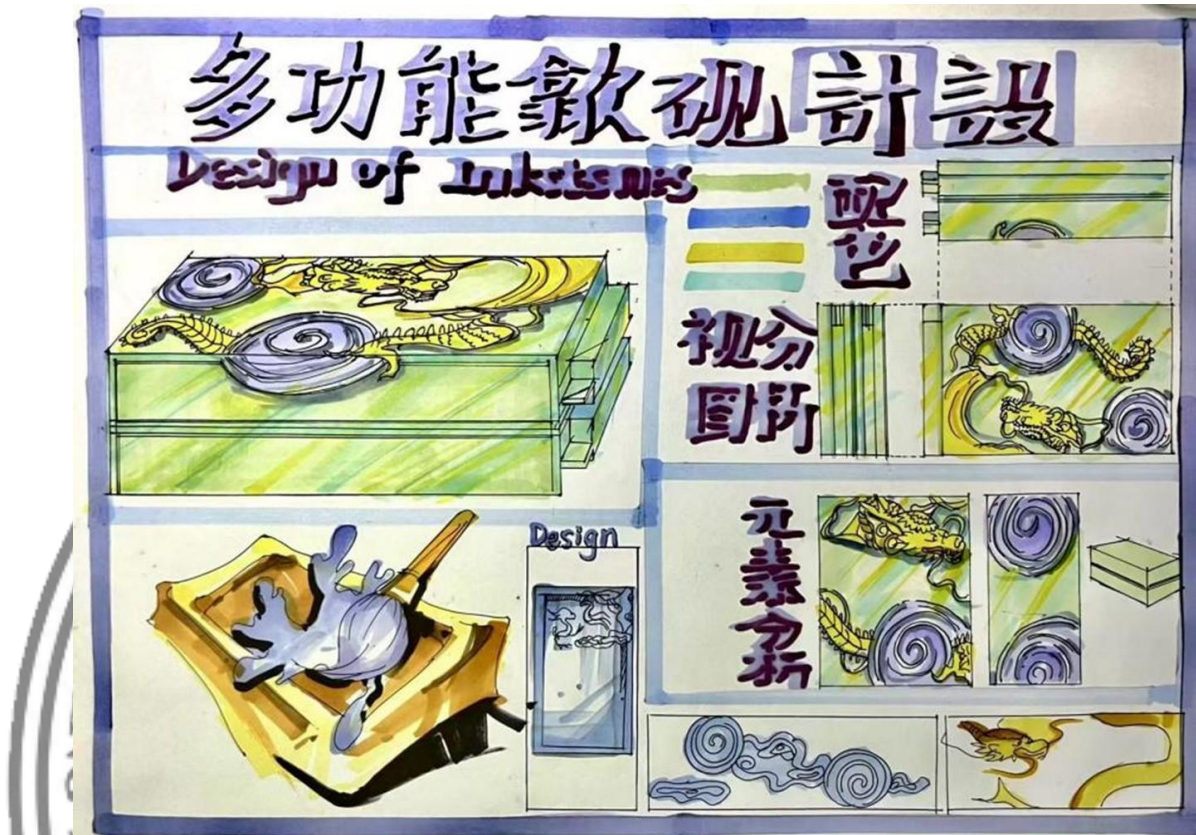


Figure 4.15
Design Diagram of the Multifunctional Dragon Pattern She Inkstone
(picture source:by the author)

Secondly, ABS is widely used in cultural and creative industries, and She inkstones made from it have been praised for aesthetics and usability. The material is eco-friendly, moldable, and supports techniques like laser engraving and injection molding, enabling seamless integration of traditional design with contemporary form.

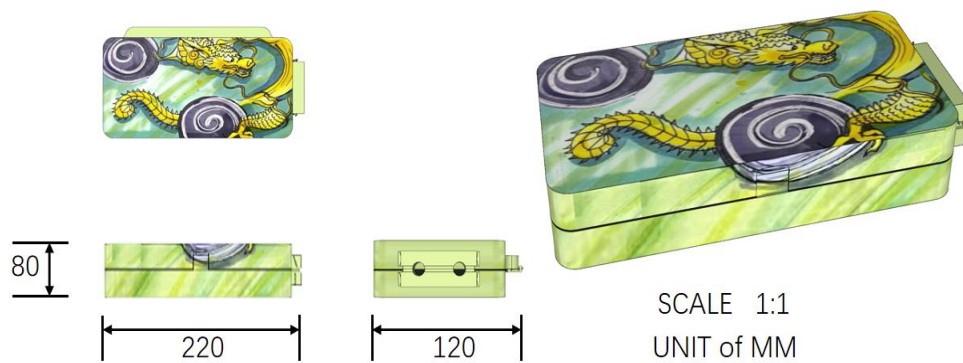


Figure 4.16
Product model three views
(picture source:by the author)

In conclusion, ABS not only supports the modernization of She inkstones in terms of technical feasibility and production scalability but also provides a solid material foundation for the continuation and reinterpretation of cultural value—making it a practical path forward for the sustainable development of traditional scholar’s tools.



Figure 4. 17
Photograph of the Multifunctional Dragon Pattern She Inkstone
(picture source:by the author)

This modern multifunctional She inkstone is made of ABS material, blending traditional She inkstone culture with contemporary design concepts. Featuring Qing Dynasty motifs such as dragons and auspicious clouds, it reflects the aesthetics of Huizhou carving and the Xinan painting school. Designed as a portable storage box, it combines practicality and cultural display with layered compartments for writing tools. The green gradient palette echoes the concept of “serenity and far-reaching vision,” making it both culturally rich and appealing to the tastes and needs of modern young users.



Figure 4. 18
Photograph of the Multifunctional Dragon Pattern She Inkstone
(picture source:by the author)

4.3 Analysis of Satisfaction Survey Results on Contemporary Inkstone Product Design

4.3.1 Sample Characteristics and Data Overview

This study targets individuals aged 18 to 24 who are collectors or researchers of traditional inkstones. According to data from the China Cultural Relics Association in 2021, the total population size is estimated at 12,450. Using the Yamane formula, $n = N / (1 + N\epsilon^2)$, with an acceptable margin of error set at 9.5% ($\epsilon = 0.095$), and a total population size of $N = 12,450$, the theoretical sample size is calculated as: $n = 12,450 / (1 + 12,450 \times 0.095^2) \approx 110$.

While the theoretical sample size is approximately 110, to account for potential issues such as incomplete or invalid responses during actual data collection, and to ensure sufficient valid responses for analysis, the sample size was moderately adjusted to 120, taking into consideration resource constraints and feasibility. In practice, a total of 112 valid questionnaires were collected, achieving a valid response rate of 93.3%. This ensured the statistical robustness of the survey results.

The sample displays a multidimensional distribution of characteristics, offering meaningful insights into the value of inkstones in a contemporary context (see Table

4.4). In terms of age distribution, 42% of participants (47 individuals) are between 18–20 years old, and typically express a preference for inkstones that blend practical functionality with trendy design. 35% (39 individuals) fall in the 21–22 age range, showing greater interest in the craftsmanship and cultural heritage aspects of inkstones. 23% (26 individuals) are aged 23–24 and often demonstrate a deeper appreciation for the classical aesthetics and authenticity of inkstone culture.

In terms of engagement frequency, 68% (76 participants) reported high-frequency use or exposure to inkstone-related content. This high-involvement group tends to have a sharper perception of usage challenges and cultural experience details, offering more in-depth feedback. Additionally, 17% (19 participants) are involved in inkstone-related professions, such as collection or academic research. Their specialized background enables precise evaluations of material properties, craftsmanship history, and cultural significance, bringing a professional perspective to the study. These participants often serve as key opinion leaders within their respective communities, shaping broader perceptions and trends around inkstone appreciation. Their insights not only enhance the academic value of the research but also inform the practical direction of product refinement and cultural storytelling.

Together, these two distinct but complementary groups—collectors and researchers—form a holistic and multi-dimensional structure of theory and practice. The collectors' firsthand feedback helps designers and manufacturers understand user preferences, purchasing motivations, and perceived value. Meanwhile, the researchers' analytical interpretations unveil the cultural depth, historical trajectory, and symbolic resonance embedded in She inkstones. This dual perspective not only reinforces the contemporary relevance of She inkstones but also creates a robust framework for future-oriented product development, ensuring that design innovation remains rooted in practical applicability while preserving academic rigor and cultural authenticity. By bridging material appreciation with cultural interpretation, this integrated approach fosters more inclusive and context-sensitive design outcomes. It also promotes deeper engagement with traditional craftsmanship in modern contexts, encouraging the next generation of creators and consumers to view heritage not as static history, but as a dynamic source of inspiration and identity. Ultimately, this synergy helps elevate She inkstones from niche artifacts to meaningful cultural products with enduring value, capable of resonating with both domestic and international audiences in an increasingly globalized creative economy. Furthermore, it encourages cross-disciplinary collaboration between designers, historians, and craftspeople, strengthening the ecosystem of cultural innovation. As such, the She inkstone is reimagined not merely as a historical object, but as a living medium for cultural continuity, reinterpretation, and expression. This ensures that the legacy of She inkstones evolves in tandem with the shifting needs, values, and aesthetics of contemporary society.

Table 4. 4
Table of Sample Characteristics Distribution

Category	Option	Frequency	Percentage
Age Distribution	18–20 years old	47	42%
	21–22 years old	39	35%
	23–24 years old	26	23%
Frequency of Engagement	Frequently Use/ Follow	76	68%
	Related Industry Practitioner	19	17%
	Occasionally Aware	17	15%
	Never Engaged	0	-
Identity	Collector	65	58%
	Researcher	47	42%

4.3.2 Reliability and Validity Testing

As shown in Table 4.5, the study assessed the reliability of the questionnaire using Cronbach's α coefficient. The overall reliability score was Cronbach's $\alpha = 0.91$, which is well above the commonly accepted threshold of 0.70. This indicates that the questionnaire has excellent internal consistency and that the measurement results are stable and trustworthy.

A more detailed analysis of each dimension revealed the following Cronbach's α values: Function and usage experience: $\alpha = 0.88$. Material and craftsmanship evaluation: $\alpha = 0.85$. Aesthetic satisfaction with appearance design: $\alpha = 0.87$. Cultural communication and heritage: $\alpha = 0.89$. Market value and positioning: $\alpha = 0.86$.

Education and popularization: $\alpha = 0.84$. All values exceeded 0.70, confirming strong internal consistency across all dimensions and meeting the reliability requirements of the study. For validity testing, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were first used to determine data suitability. The KMO value was 0.87 (greater than the minimum criterion of 0.70), and Bartlett's test yielded a chi-square value of 2,135.62 ($p < 0.001$), indicating significant correlations among variables and suitability for factor analysis.

Subsequent exploratory factor analysis extracted six common factors, which together accounted for 86.2% of the total variance. This confirms that the extracted factors have strong explanatory power and are highly consistent with the study's theoretical framework. Therefore, the questionnaire demonstrates good structural validity and can effectively measure the target constructs. The high cumulative variance indicates that most of the variability in responses is captured by the identified factors, minimizing unexplained noise. This also suggests that the questionnaire items were well-designed and aligned with participants' cognitive understanding of the constructs.

Table 4. 5
Reliability and Validity Testing

	Indicator	Value
Reliability	Cronbach's α	0.91
	KMO Value	0.87
Validity	Bartlett's Test of Sphericity	2135.62
		$p < 0.001$

4.3.3 Descriptive Statistical Analysis

As shown in Table 4-6, the analysis of mean (Mean) and standard deviation (SD) reveals key insights into young users' satisfaction with contemporary inkstone design. The "Cultural Communication and Heritage" dimension ranks highest ($M = 4.22$, $SD = 0.51$), showing strong recognition of cultural richness and transmission.

The "Functional Use Experience" ($M = 4.12$, $SD = 0.58$) reflects positive feedback on grinding performance and smart features, though anti-mold and humidifying functions need improvement. "Aesthetic Satisfaction" ($M = 4.05$, $SD = 0.55$) indicates approval of visual appeal and motif integration, with suggestions for better color harmony. "Education and Popularization" ($M = 4.01$, $SD = 0.61$) confirms user acceptance of cultural outreach through media and tourism.

By contrast, "Material and Craftsmanship" ($M = 3.89$) and "Market Value and Positioning" ($M = 3.98$) reveal expectations for improved technical integration and youth-oriented marketing, offering clear directions for product enhancement.

Table 4. 6
Descriptive Statistical Analysis Table

Dimension	Mean	SD
Functional Use Experience	4.12	0.58
Material and Craftsmanship Evaluation	3.89	0.63
Aesthetic Satisfaction with Design	4.05	0.55
Cultural Communication and Heritage	4.22	0.51
Market Value and Positioning	3.98	0.67
Education and Popularization	4.01	0.61

4.3.4 Heterogeneity Analysis

This study further conducted a heterogeneity analysis of user satisfaction across different groups. As shown in Table 4.7, significant variations were observed across dimensions based on user characteristics such as age, frequency of engagement, and identity.

From the age perspective, distinct differences emerged. For the functional use experience dimension, the 18–20 age group reported the highest mean score of 4.25, significantly higher than 4.02 for the 21–22 group and 3.91 for the 23–24 group. This suggests that younger users, as digital natives, are more receptive to innovative features and expect inkstone products to adapt to modern lifestyles.

Frequency of engagement also significantly influenced user evaluations. Respondents who frequently use or follow inkstone-related content consistently gave higher scores across all dimensions—4.32 for functionality and 4.40 for cultural communication. Their high exposure allows deeper interaction with inkstone products and their cultural context, leading to more comprehensive and positive assessments. Those working in inkstone-related professions scored the highest in material and craftsmanship evaluation (mean = 4.20), reflecting their professional background in areas such as collection or academic research. Their expertise leads to more informed and precise evaluations of stone quality and craftsmanship. In contrast, respondents who only occasionally engage with inkstone culture gave the lowest scores across all dimensions, with market value and positioning rated at just 3.72. Their limited exposure

results in superficial understanding and a lower perceived value of the product.

Differences also emerged based on user identity. Collectors gave higher ratings in material and craftsmanship (4.12) and aesthetic design satisfaction (4.15). Their interest lies in the physical possession and appreciation of inkstones, making them more attentive to craftsmanship, material quality, and visual appeal. On the other hand, researchers rated the education and popularization dimension higher (4.10 compared to collectors' 4.05), reflecting their concern for the inkstone's role in cultural dissemination and academic application. In terms of market value and positioning, collectors gave a slightly higher score (4.02) than researchers (3.92), indicating that their practical experience in the marketplace gives them a sharper sense of pricing appropriateness and market fit, whereas researchers may focus more on theoretical or cultural interpretations, with less sensitivity to commercial realities.

Through an in-depth analysis of heterogeneity in age, usage frequency, and identity, the findings highlight the importance of designing inkstone products that respond to diverse user needs. For younger users, innovation in functionality and cultural communication formats should be prioritized. For high-engagement users and professionals, deeper refinement in craftsmanship and cultural interpretation is essential. By integrating the complementary perspectives of collectors and researchers, designers can balance practical market demands with cultural depth—providing more targeted directions for contemporary innovation in inkstone design.

Table 4. 7
Heterogeneity Analysis Results

Grouping Dimension	Type	Function	Craft	Design	Culture	Market	Education
Age	18-20	4.25	3.98	4.18	4.35	4.05	4.12
	21-22	4.02	3.81	3.97	4.12	3.89	3.95
	23-24	3.91	3.75	3.89	4.01	3.78	3.88
Engagement Frequency	Frequent	4.32	4.05	4.21	4.4	4.15	4.18
	Industry Worker	4.1	4.2	4.08	4.32	3.9	4.25
	Occasional	3.85	3.68	3.82	3.91	3.72	3.79
Identity	Collector	4.18	4.12	4.15	4.3	4.02	4.05
	Researcher	4.05	3.76	3.98	4.18	3.92	4.1

Based on the satisfaction survey of She inkstone cultural and creative product design, this analysis focuses on feedback from collectors and researchers, aiming to produce a feasibility evaluation report to assess whether the product design effectively addresses and improves upon the issues raised by the designer.

Survey results indicate that She inkstone cultural products received high

satisfaction ratings in terms of preserving and promoting traditional culture, suggesting that the design has achieved a certain degree of success in cultural communication and has been well received by users. However, there remains room for improvement in internal functional design. Future iterations should further refine the thematic direction to enhance the product's relevance and appeal, making it better aligned with consumer needs. In terms of external visual design, while the overall aesthetics and stylistic coherence were positively recognized, aspects such as the sense of material quality, product line consistency, and the balance between functionality and aesthetics still require enhancement.

Overall, the survey data suggests that the designer has partially resolved issues related to weak visual identity, lack of clear design themes, insufficient product series development, and limited awareness of multicultural integration in previous cultural product designs. Based on the evaluation scores, key design factors and methods will be further applied in future She inkstone product development, both internally and externally.

The design process should fully consider modern aesthetic preferences, such as strengthening the integration of traditional auspicious symbols, regional characteristics, and contemporary cultural elements. Moreover, thematic customization based on conceptual keywords extracted from product associations—such as using “Huizhou Heritage” as an overarching theme—can highlight the cultural identity of the products. In terms of color strategy, it is important to retain the understated, classical tone of traditional She inkstones to reflect their cultural depth, while unifying the overall color scheme by adjusting brightness and saturation to achieve harmony and visual appeal.

Finally, based on the research findings, She inkstone cultural products will focus primarily on stationery design, breaking through the traditional functional limitations of stationery by enhancing practicality and creating product series. In doing so, users will experience the unique charm of She inkstones through everyday use, contributing to the better preservation and revitalization of this valuable traditional cultural heritage.

4.3.5 Optimization Strategies

In light of the remaining improvement potential in the “Cultural Communication and Heritage” dimension as revealed by the descriptive statistics, and taking into account the diverse cultural experience needs identified in the heterogeneity analysis across age and identity groups, the design strategy focuses on deepening cultural content delivery.

At the level of cultural symbol reinterpretation, the historical meanings of classic motifs from Qing Dynasty She inkstones—such as dragon and cloud patterns—should be thoroughly deconstructed. Through the use of 3D printing technology, these traditional motifs can be transformed into layered three-dimensional reliefs, offering enhanced visual and tactile appeal. Additionally, digital collectibles can be developed

using blockchain technology, granting each inkstone a unique digital identity. By scanning a QR code, users can instantly access detailed information such as motif origins and cultural stories, which caters to the digital engagement preferences of younger users while also offering deep cultural insights for collectors.

In terms of cultural narrative construction, NFC chips can be embedded inside the inkstone to link with a dedicated cultural mini-program. This platform can provide personalized experiences: for collectors, it offers source-tracing of stone veins and documentary-style stories about master craftsmen; for young researchers, it hosts a case library on Qing Dynasty inkstone translation, covering symbolic evolution, functional innovation, and academic interpretations. This layered storytelling approach meets the needs of multiple user identities and enhances cultural resonance.

To address the relatively lower scores in the “Functional Use Experience” dimension, especially among high-frequency users with strong demands for practicality, functional upgrades and innovations are proposed. For the core function, the grinding area material can be upgraded using composite nano-stone, improving fineness and texture. Ergonomic testing suggests optimizing the inkstone surface tilt to 13–15° to improve grinding comfort. For frequent users, a removable smart humidity monitor can be added to display real-time ambient humidity and automatically activate anti-mold protection, solving common pain points in traditional inkstone use.

For extended functionalities, to meet younger users’ preference for smart interactions, a wireless charging base can be integrated, compatible with smartphones, digital pens, and other devices. A dedicated mobile app can be developed to record grinding time, ink consumption, and generate a personalized “Scholar’s Usage Report” with social sharing features, increasing engagement and extending the interaction experience beyond function into lifestyle integration.

In response to issues of color coordination under the “Aesthetic Satisfaction with Appearance Design” dimension, and considering aesthetic preference differences across age and identity groups, a differentiated appearance strategy is proposed. In terms of color and form innovation, multiple versions will be introduced. For younger users, a “Guochao color clash” edition is designed, featuring a vibrant turquoise base accented with gilded lines to reflect modern aesthetics.

For identity-based customization, segmented designs will be launched:

A limited-edition craft replica for collectors, emphasizing authentic restoration of traditional carving techniques, to enhance collectible value; A “Cultural Research Toolkit” for researchers, combining inkstone samples, a craftsmanship analysis manual, and digital research tool cards, integrating both aesthetic presentation and academic utility. Through precise alignment with diverse user needs, overall satisfaction across different segments can be significantly improved.

CHAPTER 5

SUMMARY DISCUSSION AND SUGGESTSUGGESTIONS

In " Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design", the researchers summarized the findings and recommendations.

5.1 Summary of findings

5.1.1 Summary of research findings on the history, art, culture and product design of she Inkstones

The comprehensive research findings offer an in-depth exploration into the realm of She inkstones, a traditional art form that encapsulates the essence of Chinese culture and craftsmanship. The historical aspect of the research meticulously traces the origins of She inkstones, detailing their evolution from simple writing tools to sophisticated art pieces that symbolize status and refinement. The artistry of these inkstones is examined through their intricate carvings, which often feature symbolic motifs that reflect the values and beliefs of the time. Culturally, She inkstones are shown to be more than mere functional objects; they are a repository of Chinese heritage, embodying the philosophical and literary traditions that have shaped the country's cultural identity.

The product design analysis reveals the careful consideration given to the form and function of She inkstones. Craftsmen are found to employ a variety of techniques, from delicate engraving to robust construction, ensuring that each inkstone is both a work of art and a practical tool for calligraphy and painting. The research also addresses the aesthetic and symbolic significance of the materials used, such as the choice of stone and the application of pigments, which together create a unique and harmonious aesthetic that resonates with users.

Furthermore, the findings underscore the role of She inkstones in fostering a deeper appreciation of traditional Chinese culture. They serve as a bridge between the past and present, allowing contemporary society to connect with the wisdom and artistic legacy of ancient China. The research concludes by emphasizing the importance of preserving and promoting this traditional art form, ensuring that the rich cultural heritage of She inkstones continues to inspire and educate future generations.

5.1.2 Cultural and Creative Products Development Results Summary

The research on the traditional craftsmanship of She inkstones from the Qing dynasties has yielded significant results in the development of cultural and creative products. The integration of traditional techniques with modern design principles has led to the creation of several innovative products. These products only showcase the intricate engrave and craftsmanship of She inkstones but also appeal to contemporary tastes. Key highlights of the development results include:

Innovative Design: The application of traditional She inkstone motifs in modern contexts, resulting in unique and aesthetically pleasing products.

Material Exploration: The use of new materials and finishes that complement the traditional craftsmanship, enhancing the overall appeal of the products.

Market Reception: Positive market response with an increasing demand for these cultural and creative products, indicating a growing appreciation for traditional craftsmanship.

Experts widely agreed that the dragon-pattern design not only accurately conveyed the imagery of prestige and authority found in Qing Dynasty She inkstones but also demonstrated exceptional visual appeal and market potential within a modern design context. Regarding function and structural design, experts gave positive feedback, particularly highlighting the innovative material choice (ABS plastic), which maintains practical usability while offering better possibilities for manufacturing and mass production. This makes the product appealing not only to professional calligraphy and painting users who demand functionality and durability but also to general consumers seeking a product with both cultural value and gifting potential.

Additionally, experts emphasized that this product showcases strong comprehensive innovation in areas such as cultural symbolism translation, material and processing techniques, and market adaptability. It successfully achieves the transformation of a traditional scholar's studio tool into a modern, market-oriented product. This combination of tradition and innovation has earned high professional recognition from experts, laying a solid foundation for future product development and market promotion.

5.1.3 Summarize the Satisfaction Evaluation Results of She Inkstones

The satisfaction evaluation of the developed cultural and creative products based on She inkstone craftsmanship revealed promising results. Customers expressed high satisfaction with the following aspects:

Aesthetic Appeal: The products were appreciated for their beautiful and intricate designs, which blend traditional and modern aesthetics.

Functional Utility: The products were found to be functional and suitable for a variety of uses, from decorative items to practical writing instruments.

Cultural Value: There was a strong appreciation for the cultural significance of the products and the preservation of traditional craftsmanship.

Based on the consumer satisfaction survey targeting 99 young participants aged 18 to 24 in Huizhou Town, She County, the evaluation of the multifunctional She inkstone design yielded insightful results. Among the assessed dimensions, the "Cultural Communication and Heritage" category achieved the highest mean score (M

= 4.22, SD = 0.51), demonstrating that young users strongly appreciated the design's ability to convey cultural depth and symbolic meaning. This indicates that the product successfully resonates with the younger generation's growing interest in cultural identity and heritage preservation.

The "Functional Use Experience" dimension received a positive rating ($M = 4.12$, $SD = 0.58$), reflecting young consumers' satisfaction with the inkstone's usability, particularly its grinding performance and integrated smart features. However, feedback also highlighted areas for improvement, such as enhancing the anti-mold and humidification functions.

The "Aesthetic Satisfaction" score ($M = 4.05$, $SD = 0.55$) revealed widespread approval of the product's visual design, especially regarding the integration of traditional dragon motifs, although some participants suggested further improvements in color harmony and material texture.

In the "Education and Popularization" category ($M = 4.01$, $SD = 0.61$), respondents showed positive engagement with the cultural education components delivered through media and digital channels. Meanwhile, the slightly lower scores in "Material and Craftsmanship" ($M = 3.89$) and "Market Value and Positioning" ($M = 3.98$) suggest that young consumers expect further technical enhancements and more youth-oriented marketing strategies.

Overall, the survey results demonstrate that the multifunctional dragon-pattern She inkstone effectively connects traditional cultural values with modern design preferences, earning high levels of satisfaction among young users. These insights provide a valuable foundation for further optimizing the product's market fit and enhancing its cultural storytelling appeal.

5.2 Discussion of Findings

The findings of this study indicate that the traditional craftsmanship of She inkstones holds immense potential for application in modern product design. The fusion of traditional elements with modern design practices has not only preserved the cultural heritage but also made it relevant to contemporary consumers. Key discussions include:

1. **Preservation and Innovation:** The study highlights the importance of preserving traditional craftsmanship while also embracing innovation to cater to modern demands.
2. **Cultural Relevance:** The products developed have successfully bridged the gap between traditional practices and modern lifestyle,
3. **Economic Impact:** The development of these cultural and creative products has the potential to contribute significantly to the economy, particularly in the areas of tourism and cultural heritage preservation.

5.3 Suggestions

5.3.1 Application Research Recommendations:

To further enhance the application of She inkstone craftsmanship in product design, the following recommendations are made:

Continuous Research: Conduct ongoing research to explore new design possibilities and materials that can be integrated with traditional techniques.

Collaboration with Artists and Designers: Encourage collaboration between traditional artisans and modern designers to foster creativity and innovation.

Market Analysis: Regularly analyze market trends and consumer preferences to adapt and improve product designs accordingly.

5.3.2 Suggestions for Future Research:

For future research, the following suggestions are proposed:

Expansion of Product Range: Explore the potential of She inkstone craftsmanship in a wider range of product categories, such as home decor, fashion accessories, and furniture.

Sustainability Focus: Investigate sustainable practices and materials that can be incorporated into the production process to ensure environmental responsibility.

Cultural Education: Develop educational programs to raise awareness and appreciation of traditional craftsmanship among the younger generation, ensuring its continued relevance and survival.

In conclusion, the study has demonstrated the rich potential of She inkstone craftsmanship in modern product design, offering a pathway for the preservation and evolution of this valuable cultural heritage.

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APPENDIX

APPENDIX A

Question for Design

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

Researcher: Jiakun Ye

Objective: Design of contemporary She inkstones

Rating Scale:

5 = 4.51-5.00: Very satisfied

4 = 3.51-4.50: Satisfied

3 = 2.51-3.50: Neutral

2 = 1.51-2.50: Slightly dissatisfied

1 = 1.00-1.50: Dissatisfied

question	Level of opinion				
	5	4	3	2	1
1. Aesthetics					
1.1 The overall appearance style of She Inkstones is visually appealing.					
1.2 Dragon pattern element is attractive and culturally meaningful					
1.3 Huizhou architectural elements enhance the design's regional identity					
1.4 Color scheme reflects traditional Chinese cultural characteristics					
1.5 The She Inkstones design harmoniously combines traditional elements with contemporary style					
2. Function					
2.1 The She Inkstones support grinding functions					
2.2 The She Inkstones integrates office practicality appropriately					
2.3 The She Inkstones includes cultural experience teaching functions					
2.4 The She Inkstones enables meaningful digital interaction					
2.5 The She Inkstones storage function is well-integrated into the design					

question	Level of opinion				
	5	4	3	2	1
3. Safety					
3.1 Does the She Inkstone's material selection meet professional safety standards for long-term desk use?					
3.2 Does the product design effectively minimize risks of tipping, slipping, or instability on the desk?					
3.3 Are the edges, surfaces, and corners designed to prevent accidental cuts or abrasions during handling or use?					
3.4 Does the She Inkstone demonstrate adequate chemical and environmental safety, such as resistance to moisture or ink corrosion?					
3.5 Are the manufacturing and finishing processes of the product aligned with safe, non-toxic, and sustainable material practices?					
4. Structure					
4.1 Is the overall structural integrity of the She Inkstone robust enough to ensure long-term durability under repeated use?					
4.2 Are the functional zones (e.g., grinding area, ink well, decorative areas) logically organized for professional use?					
4.3 Does the design integrate traditional craftsmanship into the structural form in a way that enhances visual and functional coherence?					
4.4 Are the assembled or combined parts seamlessly integrated, without compromising strength or appearance?					
4.5 Does the She Inkstone's structure allow for modularity or future adaptation (e.g., adding new features or functions)?					
5. Ergonomic					
5.1 Is the She Inkstone's size, height, and shape optimized for comfortable desk use without causing strain or fatigue?					
5.2 Does the product design consider user interaction patterns, making it intuitive and easy to operate?					
5.3 Are the tactile qualities (e.g., surface texture, edge finish) designed to enhance sensory satisfaction and reduce discomfort?					
5.4 Is the design inclusive and adaptable to diverse user needs, such as left-handed and right-handed users?					
5.5 Does the She Inkstone promote an ergonomic workflow in its intended use context, supporting natural posture and efficient tasks?					

This study is based on industry practitioners' opinions and experts' opinions. Industry practitioners' and experts' opinions are important for product innovation and design.

 (_____)
 Evaluator
 Date ____ / ____ / ____

APPENDIX B

Question for Design

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

Researcher: Jiakun Ye

Objective: Evaluate the satisfaction of the teenagers towards product design of contemporary She inkstones.

Rating Scale:

- 5 = 4.51-5.00: Very satisfied
 4 = 3.51-4.50: Satisfied
 3 = 2.51-3.50: Neutral
 2 = 1.51-2.50: Slightly dissatisfied
 1 = 1.00-1.50: Dissatisfied

question	Level of opinion				
	5	4	3	2	1
1. Beauty					
1.1 Satisfaction with overall appearance style					
1.2 Visual appeal of the dragon pattern					
1.3 Harmony of color matching					
1.4 Fusion of modern style and traditional culture in design					
1.5 Appeal of She Inkstones products to young people					
2. Function					
2.1 Practicality of basic functions (e.g., grinding, ink storage)					
2.2 Satisfaction with innovative functions (e.g., storage, decoration)					
2.3 Practicality of ink-dipping and pen-resting functions					
2.4 Practicality of paper-pressing function					
2.5 Adaptability of functions to usage scenarios					
3. Ergonomic					
3.1 Is the structural design of the She Inkstones reasonable and user-friendly for practical use					

question	Level of opinion				
	5	4	3	2	1
3.2 Portability (ease of carrying and storage)					
3.3 Suitability for everyday writing or study settings					
3.4 Does the She Inkstone's height and angle allow you to grind ink comfortably without straining your wrist or arm?					
3.5 Does the design accommodate both right-handed and left-handed users equally well?					
4. Safety					
4.1 Do you feel safe using the She Inkstone on your desk without worrying about it tipping or sliding?					
4.2 Are there any sharp or rough edges on the She Inkstone that could potentially scratch or injure users?					
4.3 Does the She Inkstone material feel non-toxic and safe for regular contact (e.g., touching, cleaning)?					
4.4 Are you confident that the She Inkstone won't break or chip easily if lightly bumped or moved on the desk?					
4.5 Do you think the product's design minimizes the risk of accidental spills or mess when grinding ink?					
5. Durability					
5.1 Do you feel the She Inkstone can withstand repeated daily use on a desk without showing signs of wear or damage?					
5.2 Do you think the She Inkstone will maintain its appearance and texture over time despite regular handling or cleaning?					
5.3 Are you confident that the She Inkstone's surface is resistant to stains, ink residue, or water marks after long-term use?					
5.4 Does the She Inkstone feel solid and unlikely to crack or chip if accidentally bumped or moved on the desk?					
5.5 Do you believe the She Inkstone's material and construction quality make it a long-lasting and valuable item?					

This study is based on industry practitioners' opinions and experts' opinions. Industry practitioners' and experts' opinions are important for product innovation and design.

 (_____)
 Evaluator
 Date ____ / ____ / ____



APPENDIX C



บันทึกข้อความ

หน่วยงาน ส่วนสนับสนุนวิชาการ งานบริหารวิชาการบัณฑิตศึกษา คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี โทร. 6100

ที่ อว ๗๐๐๕.๑(๑๑)/๕ ๑๒๕๒

วันที่ ๖ มีนาคม ๒๕๖๘

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิตรวจและประเมินแบบสอบถามและแบบประเมินเพื่อการวิจัย
เรียน ผู้ช่วยศาสตราจารย์ ดร.ธเนศ ภิรมย์การ

ด้วย Mr. Jiakun Ye รหัสนักศึกษา 67036003 หลักสูตรครุศาสตร์อุตสาหกรรมมหาบัณฑิต สาขาวิชาเทคโนโลยีการออกแบบผลิตภัณฑ์อุตสาหกรรม สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง กำลังทำวิทยานิพนธ์เรื่อง "STUDY THE CULTURE CRAFTSMANSHIP OF SHE INKSTONES FROM THE QING DYNASTY TO PRODUCT DESIGN" โดยมี ผศ.ดร.สมชาย เซะวิเศษ เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ และ รศ.ดร.จตุรงค์ เลาหะเพ็ญแสง เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ร่วม

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี พิจารณาแล้วเห็นว่าท่านเป็นผู้มีความสามารถเกี่ยวกับเรื่องดังกล่าวเป็นอย่างดี จึงขอเชิญท่านเป็นผู้ทรงคุณวุฒิตรวจและประเมินแบบสอบถามและแบบประเมินนี้ว่ามีเนื้อหาถูกต้องและเหมาะสมมากน้อยเพียงใด ซึ่งผลการตรวจของท่านจะช่วยให้งานวิจัยของ Mr. Jiakun Ye มีความสมบูรณ์ยิ่งขึ้น พร้อมกันนี้ได้แนบแบบสอบถามและแบบประเมินมาด้วย

จึงเรียนมาเพื่อโปรดพิจารณา โดยหวังว่าจะได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณเป็นอย่างยิ่ง มา ณ โอกาสนี้ด้วย

ธีรชกร

(ศาสตราจารย์ ดร.ปรียาภรณ์ ตั้งคุณานันต์)

คณบดีคณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี

๐๖ มี.ค. ๒๕ ๖๘ ๖๘๑๕๕๕๕ Non-PKI Server Sign-LN
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Index of Item-Objective Congruence, IOC

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

Researcher: Jiakun Ye

Objective: Design of contemporary She inkstones

Instrument Quality Check

Description For experts in instrument quality check

Criteria for instrument check Instrument check to be used in research according to experts' opinions use the following criteria:

+1 means that the statement or question is usable and appropriate for the content according to the research conceptual framework.

0 means that the statement or question is uncertain whether it is appropriate for the content according to the research conceptual framework.


-1 means that the statement or question is not consistent or not appropriate for the content according to the research conceptual framework.

In the case that experts have checked and given an evaluation of 0 or -1 for any statement or question, please kindly provide comments or suggestions for further improvement. It would be greatly appreciated.

question	score			IOC	result
	-1	0	1		
1.The Sheyan supports grinding function well.		✓			gongshu shu
2.The Sheyan integrates office practicality appropriately.			✓		
3.The Sheyan includes cultural experience teaching functions.			✓		
4.The Sheyan enables meaningful digital interaction.			✓		
5.The Sheyan's storage function is well-integrated into the design.			✓		
6.The overall appearance style of Sheyan is visually appealing.			✓		
7.Dragon pattern element is attractive and culturally meaningful.			✓		
8.Huizhou architectural elements enhance the design's regional identity.			✓		
9.Color scheme reflects traditional Chinese cultural characteristics.			✓		
10.The Sheyan's shape design shows innovation.			✓		
11.The pattern design of Sheyan is both ingenious and beautiful.			✓		
12.The Sheyan design harmoniously combines traditional elements with contemporary style.			✓		
13.The design presents cultural elements such as motifs and historical anecdotes effectively.			✓		
14.The Sheyan's design helps promote traditional culture in modern formats such as social media.			✓		
15.The Sheyan design is suitable for integration into school curricula.			✓		

question	score		IOC	result
16. The Sheyan design is suitable for cultural tourism and study programs.				
17. The Sheyan design effectively supports the inheritance of traditional culture.		✓		
18. The design stimulates user interest in She Inkstone culture.		✓		
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20. The core market for this product includes young consumers.		✓		
21. I have high expectations for the modern-aesthetic appearance of products with Sheyan craftsmanship.		✓		

This study is based on industry practitioners' opinions and experts' opinions. Industry practitioners' and experts' opinions are important for product innovation and design.


 Dr. Arvind Sharma
 Evaluator
 Date 21/5/20



บันทึกข้อความ

หน่วยงาน คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี งานวิชาการและวิจัย โทร. 6100

ที่ อว ๗๐๐๔/๓ ๑๒๔๐

วันที่ ๖ มีนาคม ๒๕๖๔

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิตรวจและประเมินแบบสอบถามและแบบประเมินเพื่อการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.พรณทิพา วาณิชยจิรัฐติกาล

ด้วย Mr. Jiakun Ye รหัสนักศึกษา 67036003 หลักสูตรครุศาสตร์อุตสาหกรรมมหาบัณฑิต สาขาวิชาเทคโนโลยีการออกแบบผลิตภัณฑ์อุตสาหกรรม สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง กำลังทำวิทยานิพนธ์เรื่อง "STUDY THE CULTURE CRAFTSMANSHIP OF SHE INKSTONES FROM THE QING DYNASTY TO PRODUCT DESIGN" โดยมี ผศ.ดร.สมชาย เซะวิเศษ เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ และ รศ.ดร.จตุรงค์ เลาหะเพ็ญแสง เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ร่วม

คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี พิจารณาแล้วเห็นว่าท่านเป็นผู้มีความสามารถเกี่ยวกับเรื่องดังกล่าวเป็นอย่างดี จึงขอเชิญท่านเป็นผู้ทรงคุณวุฒิตรวจและประเมินแบบสอบถามและแบบประเมินนี้ว่ามีเนื้อหาถูกต้องและเหมาะสมมากน้อยเพียงใด ซึ่งผลการตรวจของท่านจะช่วยให้งานวิจัยของ Mr. Jiakun Ye มีความสมบูรณ์ยิ่งขึ้น พร้อมกันนี้ได้แนบบแบบสอบถามและแบบประเมินมาด้วย

จึงเรียนมาเพื่อโปรดพิจารณา โดยหวังว่าจะได้รับความอนุเคราะห์จากท่านด้วยดี และขอขอบคุณเป็นอย่างยิ่ง มา ณ โอกาสนี้ด้วย

พรทิพย์

(ศาสตราจารย์ ดร.ปริญารณ์ ตั้งคุณานันต์)

คณบดีคณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี

๐๖ มี.ค. ๒๕๖๔ ๑๖:๓๖:๓๖ Non-PK Server Sign-LN

Signature Code : RABFA-DAARO-ASAEU-ARABC

อ.พรณทิพา วาณิชยจิรัฐติกาล

Puntporn

ผศ.ดร. พรณทิพา วาณิชยจิรัฐติกาล

Index of Item-Objective Congruence, IOC

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

Researcher: Jiakun Ye

Objective: Evaluate the satisfaction of the teenagers towards product design of contemporary She inkstones.

Instrument Quality Check

Description For experts in instrument quality check

Criteria for instrument check Instrument check to be used in research according to experts' opinions use the following criteria:

+1 means that the statement or question is usable and appropriate for the content according to the research conceptual framework.

0 means that the statement or question is uncertain whether it is appropriate for the content according to the research conceptual framework.

-1 means that the statement or question is not consistent or not appropriate for the content according to the research conceptual framework.

In the case that experts have checked and given an evaluation of 0 or -1 for any statement or question, please kindly provide comments or suggestions for further improvement. It would be greatly appreciated.

question	score			IOC	result
	-1	0	1		
1. Practicality of basic functions (e.g., grinding, ink storage)			✓		
2. Satisfaction with innovative functions (e.g., storage, decoration)			✓		
3. Practicality of ink-dipping and pen-resting functions			✓		
4. Practicality of paper-pressing function			✓		
5. Necessity of adding office-practical functions			✓		
6. Simplicity of function operation			✓		
7. Adaptability of functions to usage scenarios			✓		
8. Satisfaction with overall appearance style			✓		
9. Visual appeal of the dragon pattern			✓		
10. Harmony of color matching			✓		
11. Fusion of modern style and traditional culture in design			✓		
12. Is the structural design of the Sheyan reasonable and user-friendly for practical use?			✓		
13. Portability (ease of carrying and storage)			✓		
14. Suitability for everyday writing or study settings			✓		
15. Appeal of Sheyan products to young people			✓		

Index of Item-Objective Congruence, IOC

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

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1. The Sheyan supports grinding function well.			✓		
2. The Sheyan integrates office practicality appropriately.			✓		
3. The Sheyan includes cultural experience teaching functions.			✓		
4. The Sheyan enables meaningful digital interaction.			✓		
5. The Sheyan's storage function is well-integrated into the design.			✓		
6. The overall appearance style of Sheyan is visually appealing.			✓		
7. Dragon pattern element is attractive and culturally meaningful.			✓		
8. Huizhou architectural elements enhance the design's regional identity.			✓		
9. Color scheme reflects traditional Chinese cultural characteristics.			✓		
10. The Sheyan's shape design shows innovation.			✓		
11. The pattern design of Sheyan is both ingenious and beautiful.			✓		
12. The Sheyan design harmoniously combines traditional elements with contemporary style.			✓		
13. The design presents cultural elements such as motifs and historical anecdotes effectively.			✓		
14. The Sheyan's design helps promote traditional culture in modern formats such as social media.			✓		
15. The Sheyan design is suitable for integration into school curricula.			✓		

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1. The Sheyan design is suitable for cultural tourism and study programs.			✓		
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This study is based on industry practitioners' opinions and experts' opinions. Industry practitioners' and experts' opinions are important for product innovation and design.

Partipa W.
 ()
 Evaluator
 Date ____/____/____

Index of Item-Objective Congruence, IOC

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14. Suitability for everyday writing or study settings			✓		
15. Appeal of Sheyan products to young people			✓		

question	score			IOC	result
16.Likelihood of recommending Sheyan to others			✓		
17.Effectiveness of social media promotion			✓		
18.Effectiveness of campus courses as a promotional channel			✓		
19.Increase in attention to traditional handicrafts after exposure to Sheyan			✓		
20.Significance of this product in cultural inheritance			✓		
21.Willingness to learn more about Huizhou culture through such products			✓		

This study is based on industry practitioners' opinions and experts' opinions. Industry practitioners' and experts' opinions are important for product innovation and design.

Pampho Yi
()

Evaluator

Date ___/___/___



บันทึกข้อความ

หน่วยงาน คณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี งานวิชาการและวิจัย โทร. 6100

ที่ อว ๗๐๐๔/๕ ๑๒๔๑

วันที่ ๖ มีนาคม ๒๕๖๘

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิตรวจและประเมินแบบสอบถามและแบบประเมินเพื่อการวิจัย

เรียน ผู้ช่วยศาสตราจารย์ ดร.สิทธิชัย เจริญเศรษฐศิลป์

ด้วย Mr. Jiakun Ye รหัสนักศึกษา 67036003 หลักสูตรครุศาสตร์อุตสาหกรรมมหาบัณฑิต สาขาวิชาเทคโนโลยีการออกแบบผลิตภัณฑ์อุตสาหกรรม สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง กำลังทำวิทยานิพนธ์เรื่อง "STUDY THE CULTURE CRAFTSMANSHIP OF SHE INKSTONES FROM THE QING DYNASTY TO PRODUCT DESIGN" โดยมี ผศ.ดร.สมชาย เศษวิเศษ เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ และ รศ.ดร.จตุรงค์ เลาหะเพ็ญแสง เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ร่วม

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ปิยะกานต์

(ศาสตราจารย์ ดร.ปรีชากรณ์ ตั้งคุณานันต์)

คณบดีคณะครุศาสตร์อุตสาหกรรมและเทคโนโลยี

๐๖ มี.ค. ๒๕ 17:๕1 ๓๓:๓๓:๐๓ Non-PKI Server Sign-LN

Signature Code : QwA2A-EUANQ-BEADK-ANQBE

สิทธิชัย

ผู้ช่วยศาสตราจารย์ ดร.สิทธิชัย เจริญเศรษฐศิลป์

Index of Item-Objective Congruence, IOC

Research topic: Study the Culture Craftsmanship of She Inkstones from the Qing Dynasties to Product Design

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Objective: Design of contemporary She inkstones

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ผู้ช่วยศาสตราจารย์ ดร.สิทธิชัย เจริญเศรษฐศิลป์

Evaluator

Date 14, 5, 2025

Index of Item-Objective Congruence, IOC

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7. Adaptability of functions to usage scenarios			✓		
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10. Harmony of color matching			✓		
11. Fusion of modern style and traditional culture in design			✓		
12. Is the structural design of the Sheyan reasonable and user-friendly for practical use?			✓		
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15. Appeal of Sheyan products to young people			✓		

question	score			IOC	result
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ผู้ช่วยศาสตราจารย์ ดร.สิทธิชัย เจริญนทรพชุตินา

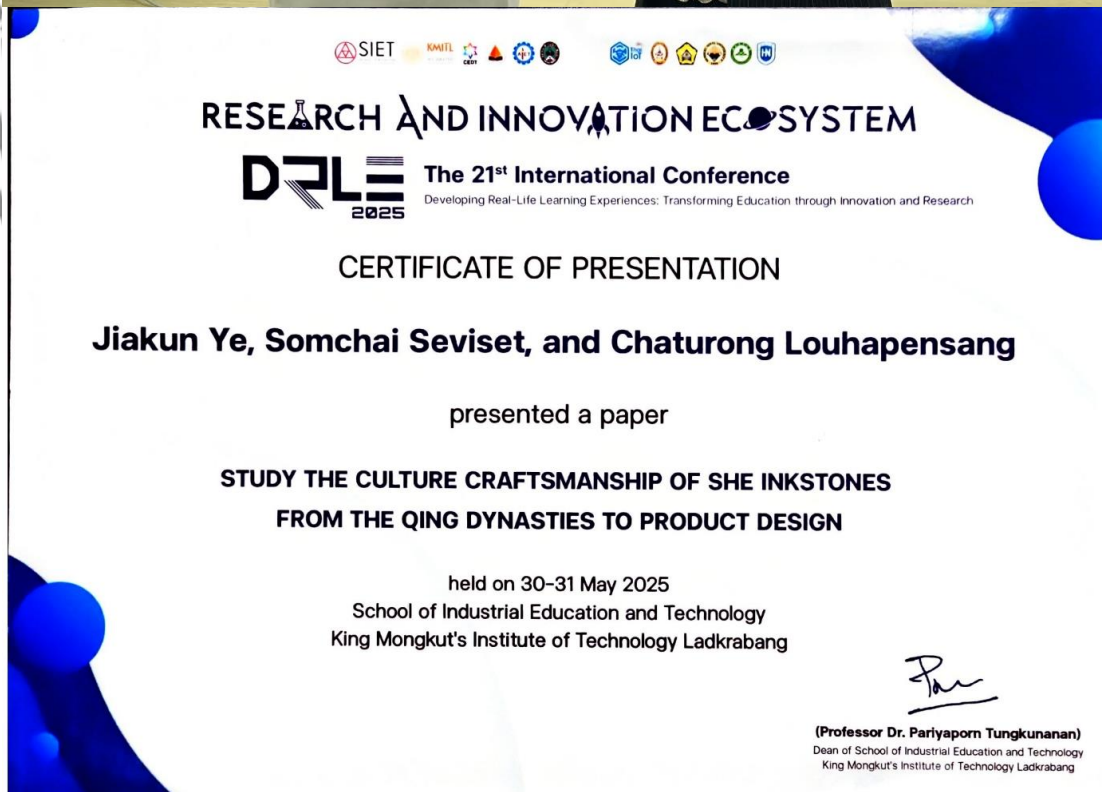
Evaluator

Date 14, 5, 2025









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Place of Birth	CHINA,ANHUI
Education	2024 ,Graduated Bachelor Degree of Integrated Innovation for Products and Services at King Mongkut's Institute of Technology Ladkrabang.
Current Address	CHINA,ANHUI
Publication	Click or tap here to enter text.
Award Received	Click or tap here to enter text.