

# Cultural Expression and Inheritance in Ceramic Art Design Based on Cross-border Integration

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**Abstract:** A traditional ceramic art creation is restricted by culture's established conventions and aesthetics, making the innovation of the classic excellence difficult. The cross-border integration-based design can make it possible to make the mixed cultural element's innovative and contemporary works, and increase the diversity, uniqueness, and cultural expression of expression. In this study, a literature review and case study were conducted. First, the theoretical foundation and benefits of the literature review of a cross-border integration-based ceramic creation was utilized to determine the principles. After that, a case study was conducted. The cross-border integration-based ceramic art design practice and its actual effect on the cultural expression and heritage were investigated. The outcomes revealed that cross-border integration-based ceramic design challenged the border of tradition, creating a new cultural dimension in a neutral artwork.

## 1. Introduction

Ceramic art design is a crucial cultural expression and traditional craft that is very important historically, culturally, and artistically. However, traditional ceramic art design is constrained by the inheritances and innovations of traditional cultural heritage. The inheritance and innovation of traditional ceramic art design faces significant restrictions in traditional cultural conventions and styles, which is difficult to break through traditional frameworks. More and more designers have applied cross-border integration to promote the development and innovation of ceramic art design, using different cultural elements to make a unique creative work. This article is aimed at exploring the superiority and potential of ceramic art design based on cross-border integration in cultural expression and inheritance.

In today's context of globalization, cross-border integration design is very meaningful. This design can help to break traditional cultural boundaries. It helps to promote cultural communication and integration, and it offers new directions for cultural inheritance and development. Designers can use elements, symbols, and expressions from multiple cultures to form works with a strong global perspective and a kind of universality. Through design, it helps ceramics to be not bounded by specific geographical and cultural restrictions, and better engage in dialogue and communication with audiences from different backgrounds.

The structure of this article is as follows: firstly, the background and research significance of ceramic art design based on cross-border integration are introduced. Secondly, this article elaborates on the research methods adopted and explores their theoretical and practical significance. Finally, the main conclusions and findings of this study are presented, as well as prospects for future research. Through in-depth research and analysis of ceramic art design based on cross-border integration, it is hoped to contribute to promoting the innovative development of ceramic art and cultural diversity, and provide new ideas and inspiration for designers and art enthusiasts.

## 2. Related Work

Many people have conducted research on ceramic design. Based on a brief analysis of ceramic painting elements and their association with ceramic art design, Lv Wenwen focused on exploring innovative strategies for integrating ceramic painting elements into ceramic art design from several aspects such as patterns, colors, lines, patterns, and materials, in order to better serve the development of ceramic art design [1]. Li Zixu took legal measures such as improving the copyright protection system for artificial intelligence generated products and creating a registration system for artificial intelligence generated products, in order to build a legal framework that can promote technological innovation and protect the legitimate rights and interests of stakeholders, fundamentally reducing disputes over ceramic copyright and promoting the healthy development of the ceramic industry [2]. Ma Siyan's goal was to deeply analyze the application of ceramic art in the environment, aiming to enhance the aesthetic value of public spaces through this art form. At the same time, she also hoped to increase the public's understanding and appreciation of ceramic art, thereby further promoting its development and popularization in the field of contemporary art [3]. Jiang Xiaolan comprehensively elaborated on the meaning of ideological and political education in the curriculum and the actual teaching situation, and explored the specific methods of applying ideological and political education into the teaching activities of ceramic art and design courses from the perspective of actual teaching activities [4]. Yuan Jie conducted research on the cultivation of ceramic art and design talents, as well as industry university cooperation. She also visited cultural and creative markets in various ceramic districts, as well as ceramic artist studios, to summarize the ceramic talent cultivation models and social services provided by various universities after graduation, as well as the role played by the government and the market [5]. Yang Z introduced design strategies for each dielectric ceramic based on its unique physical properties [6]. Li D reviewed the latest developments in metastable SiBOCN ceramics, aiming to summarize key findings, reveal major trends, and provide guidance for future work [7]. Kim K J reported an alternative ceramic processing strategy that can manufacture full oxide composite cathodes at abnormally low processing temperatures [8]. Wei Z Y reviewed the latest developments in some new ceramic materials [9]. Yan F's discovery opened up a new and effective way to explore new environmentally friendly ceramics with excellent energy storage performance [10]. These studies provide reference for the work of this article, aiming to explore the advantages and potential of ceramic art design based on cross-border integration in cultural expression and inheritance.

## 3. Methods

### 3.1 Theoretical Framework and Methods of Cross-Border Integration

Cross-border integration is an innovative creation which combines all kinds of knowledge sectors, cultures and technologies to create unique and innovative art and design works by breaking through the boundaries and integrating and developing new things, In the field of ceramic art and design, cross-border integration of ceramic art and design provides an extremely broad space for

creativity, which can integrate ceramic materials with other art forms, technologies, and cultural elements with cross-border that can realize diversity in creation and richness in cultural expression [11-12]. As for the theoretical framework, the cross-border integration of ceramic art design can refer to cultural intersection theory, innovation and creativity theory, etc. Regarding the theory of cultural integration, emphasizing the mixing and blending between distinctive cultures, Chinese contemporary ceramic art creators create works with diverse cultures' unique features by integrating ceramic art with elements drawn from various regions, ethnic groups, or historical cultures. While regarding the invention and creativity theory, it is a direction to consider the problem of innovation and distinctiveness in the context of combined ceramic art and other art forms, technology, and concepts. In terms of the methods, it is feasible to cross-border integration in ceramic art design by the following methods: first, an exploration of the blending of ceramic art with a variety of art forms is explored, and examples of blending might include painting, sculpture, photography, etc., combined with ceramic materials to create a multi-disciplined work. Secondly, modern technology combined with traditional ceramic techniques can achieve both innovative technological applications and combinations of techniques and processes, such as digital design, 3D printing or even laser engraving. At the same time, cross-category or cross-boundary integration should also be taken into account, including the integration of different cultural elements, such as ethnic tradition, religious symbols or contemporary social issues, etc., to give greater cultural depth and expression to contemporary ceramic artistic creation.

To put it simply, cross-domain integration presents a new framework and approach for ceramic art design to achieve diverse thinking and cultural expression. The ceramic works as shown in this article are created using a method of integration across different areas [13-14]. Through cross-border integrated artistic practice, the ceramic work can fully express personal creative freedom, cultural innovation, and personal creative ethos, as well as promoting the existing and developing of the ceramic art. The cross-border integration of ceramic art design is not only the expansion of the field of design, but it also contributes to cultural exchange and cultural identity issues.

### **3.2 Problems Faced by the Inheritance of Ceramic Art and Design Culture**

Facing the problems and challenges in the process of cultural inheritance of ceramic art and design, the first is the impact of globalization and modernization, which has led to the gradual marginalization of traditional ceramic crafts and techniques. In other words, many traditional skills and techniques are in danger of being lost. Secondly, the younger generation is becoming less and less interested in ceramic art, and there is a lack of followers and inheritors to carry on traditional ceramic skills. Market changes and commercialization trends have also challenged the inheritance of traditional ceramic arts, and the pressure to pursue commercial interests can lead to neglect of the essence and uniqueness of ceramic arts.

The issue of cultural identity is also the issue encountered by the protection and inheritance of traditional ceramic culture. In the globalized context, the ceramic art in many regions is closely linked to the particular local culture and ethnic identity. However, with the development trend of cultural integration and diversification, the cultural identity of traditional ceramics may be blurred and lost [15-16]. At the same time, the protection and inheritance of traditional ceramic skills and craftsmanship need to be combined with the needs and aesthetic trends of contemporary society. It is just that this combined process must strike a balance between tradition and innovation, and that it must strike a point where the balance is achieved to keep the vitality and appeal of ceramic art.

Long-term apprenticeship training and apprenticeship inheritance are required for traditional ceramic craftsmanship. However, modern education systems are more geared towards fast

transmission of theoretical knowledge and skills. Modern education systems do not pay as much attention to traditional craftsmanship and the inheritance of traditional technologies, which in return results in the removal of traditional ceramic craftsmanship skills, and the collapse of skills inheritance mechanisms [17-18]. There are several problems in terms of the cultural inheritance of ceramic art and design, such as: loss of traditional crafts, decreased interest from the younger generation, commercialization pressure, identity crises for some artists, and the crisis in certain education systems in which the Chinese context of their heritage has become problematic. To protect and inherit the unique and cultural value of traditional Chinese ceramic art, a series of comprehensive measures need to be taken, including: strengthening education and training, promoting cultural protection policies, promoting a marriage of tradition and innovative practice, and enhancing the interest and understanding of younger generations on Chinese ceramic art.

### 3.3 Design Strategies and Principles for Cultural Expression and Inheritance

Table 1: Application of design strategies and principles

<b>Design Strategies and Principles</b>	<b>Description</b>
In-depth Research and Understanding of Culture	By studying the history, values, and symbolic meanings of a culture, designers can accurately grasp its cultural essence and incorporate it into their designs.
Incorporation of Traditional Elements	Using traditional symbols, patterns, forms, and other elements to express a specific culture and give the design a unique style and charm.
Innovation and Modernization	Blending traditional and contemporary elements to showcase the design's relevance to the present and attract a wider audience.
Emphasis on Storytelling and Emotional Resonance	Telling stories and evoking emotional connections to convey cultural values and experiences, enhancing the effectiveness of cultural transmission.
Social Engagement and Collaboration	Collaborating with local communities, artists, craftsmen, and other stakeholders to incorporate local wisdom and skills into the design process, showcasing and perpetuating the culture.

When it comes to design strategy and principles for the cultural expression and inheritance, their purpose is to accurately convey and to inherit particular cultural values, traditions and essence through design works. The design strategy and principles include rigorous and deep research and understanding the culture, borrowing traditional elements, the principles of innovation and modernization, the principles of storytelling and aesthetic resonance and principles of social participation and cooperation. First of all, rigorous and deep research and understanding the culture is fundamental. Designers should deeply understand the history, symbols, meanings and values of the target culture, otherwise it is impossible to ensure that the design works can accurately communicate cultural connotations. Second, borrowing traditional elements is a general principle. Through using traditional symbols, patterns, forms, and other elements, the design works can

express the unique style and charm of a particular culture. Moreover, it is important to innovate and modernize. When traditional and modern [19-20] elements are combined, the design work has the characteristics of staying up with the times, and it can also attract a wider audience. There is a very important strategy, emphasizing the storytelling and emotional connection for design works. Through storytelling, the emotional connection of design works, people are deeply impressed to understand cultural values and emotional experience by design works, and design works can get into people's hearts. Finally, it is very helpful to integrate the wisdom and skills of local communities (artists and local craftsmen... etc.) and other people into the design process. Through social participation and cooperation during the design process, it makes better design work and shows another way to inherit cultural value. Table 1 shows the application of design strategies and principles for expressing and inheriting different cultures.

## 4. Results and Discussion

### 4.1 Experimental Introduction

Cross-border integration-based ceramic art design is a novel design method intended to bring out unique cultural expression and inheritance by combining different cultural elements. To test the performance and efficiency of this design method in cultural expression and inheritance, design experiments are implemented. The purpose of the experiment is to examine if cross-border integration-based ceramic art design can be effective in cultural expression and inheritance. In the experiment, it is required that the design does not rely on the original culture, and only to combine the cultural elements correctly to develop a unique cultural expression of art so that the work can express the values, traditions, and characteristics of a certain unique culture. At the same time, it shows the designer's creativity and aesthetic concept. There are experimental groups and the controlled groups. In the experimental group, they see and experience the display of the cross-border integration-based ceramic art and design, and the controlled groups see and experience the display of the traditional ceramic art and design. The advantages and disadvantages of design methods based on cross-border integration are evaluated through comparison. The ceramic art design score, cultural expression accuracy, and innovation are selected as evaluation indicators for this article. A double-blind experiment is conducted to maintain the double-blind state of the experimental subjects and evaluators on the design work information as much as possible, in order to avoid the influence of subjective bias.

### 4.2 Experimental Results

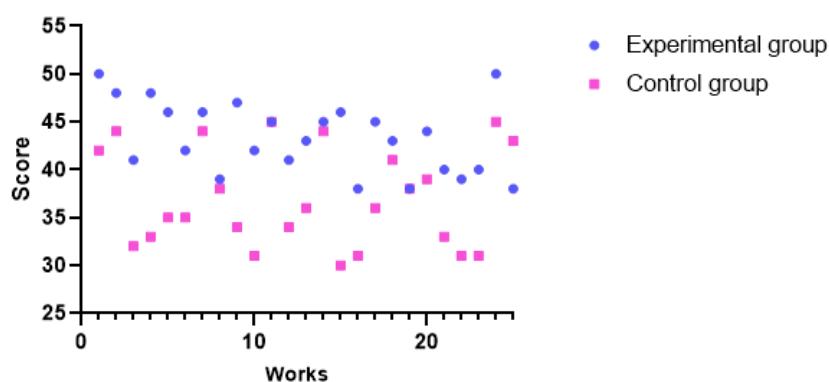


Figure 1: Score of the work

In the ceramic art and design scoring experiment, ceramic art and design works are rated by judges. During the scoring process, the judges do not know whether the works in their hands are in the experimental group or the control group. This can improve the fairness of the scoring. The maximum score is 50 points, and Figure 1 shows the scoring result:

In terms of work scores, it can be seen that the experimental group scores higher than the control group, with the highest score of 50 points and the lowest score of 38 points in the experimental group, and the highest score of 45 points and the lowest score of 30 points in the control group. This is because ceramic art design based on cross-border integration has high innovation and uniqueness, which can break through traditional limitations and thinking patterns.

Ceramic art design conveys and expresses specific cultural values through cultural elements and symbols in works. The accuracy of cultural expression means that designers can deeply understand the core values of the target culture and convey these values to the audience through their works. This helps to protect and inherit the core values of culture, while promoting cultural identity and resonance. Figure 2 shows the accuracy comparison:

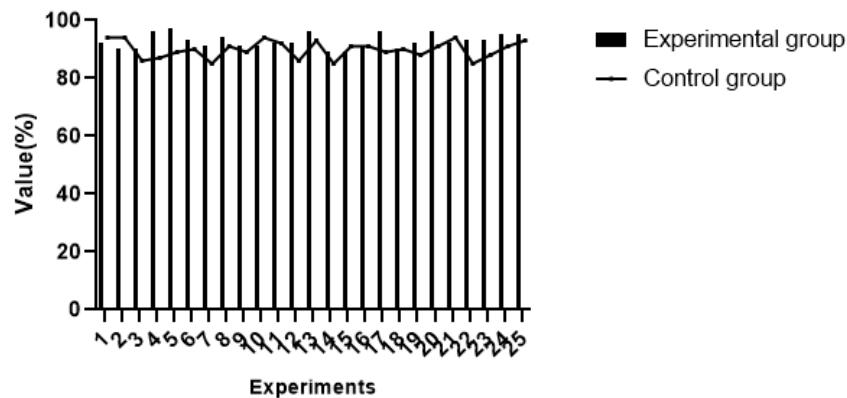


Figure 2: Accuracy of cultural expression

In the test of cultural expression accuracy, the accuracy of the experimental group in this article is between 89%-97%, which can accurately express cultural emotions through ceramic design, while the accuracy of the control group is between 85%-94%, indicating weak cultural expression ability. The experimental group's design method has advantages in deeply understanding and studying multiple cultures, integrating innovation, and showcasing cultural diversity. It can accurately convey the values, traditions, and characteristics of the target culture, and create unique and innovative works through cross-border integration techniques.

Figure 3 shows the comparison of innovation, which is divided into 5 levels: A is not innovative, and E is the most innovative. The scores are given by the judges, and the results are shown in Figure 3:

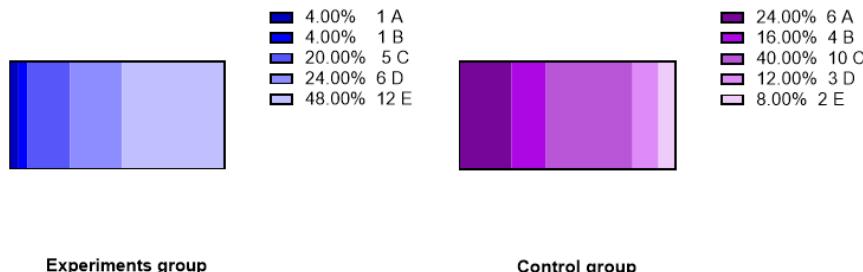


Figure 3: Innovation

In the evaluation of innovation, the evaluation results of the experimental group in this article are that A has 1 ceramic product; B has 1 product; C has 5 products; D has 6 products; E has 12 products. The bulk of their work is innovative. The evaluation results of the control group show that A has 6; B has 4; C has 10; D has 3; and E has 2, suggesting that there is a low level of innovation. The traditional ceramic art design often has constraints because of certain cultural tradition and style, making it difficult to go beyond past frameworks. The design method relying on crossing integration has more freedom and creativity.

## 5. Conclusions

Design based on cross-border integration requires designers to carry out in-depth research and understanding of multiple cultures. This understanding enables designers to express the values, traditions, and characteristics of the target culture accurately and effectively. Through the study of different cultures, designers can capture the essence of culture, and use it in the ceramic art, achieving the cultural expression and inheritance effectively. Such method can break through traditional cultural boundaries, and create a work beyond specific cultures, thus combining them and creating work from a global perspective and universality. This design method between cultural boundaries can promote communication and understanding between different cultures, providing new routes for cultural heritage and development.

## References

- [1] Lv Wenwen. *Exploration of Innovative Strategies for Integrating Ceramic Painting Elements into Ceramic Art Design* [J]. *Foshan Ceramics*, 2024, 34 (3): 136-138
- [2] Li Zixu, Cui Wenjun, Zhou Yang. *Copyright and Protection of Artificial Intelligence Generations in Ceramic Art and Design* [J]. *Shandong Ceramics*, 2024, 47 (3): 63-71
- [3] Ma Siyan. *Research on the Application of Environmental Art in Ceramic Art Design* [J]. *Foshan Ceramics*, 2024, 34 (2): 169-171
- [4] Jiang Xiaolan, Zou Ziyi. *Research on the Education Method of Integrating "Ideological and Political Elements" into Ceramic Art and Design Curriculum* [J]. *Ceramic Research*, 2023, 38 (2): 107-109
- [5] Yuan Jie. *Exploring the talent cultivation model for ceramic art and design in universities in ceramic production areas*. *Ceramic Science and Art*, 2023, 57 (9): 50-52
- [6] Yang Z, Du H, Jin L, et al. *High-performance lead-free bulk ceramics for electrical energy storage applications: design strategies and challenges* [J]. *Journal of Materials Chemistry A*, 2021, 9(34): 18026-18085.
- [7] Li D, Jia D, Yang Z, et al. *Principles, design, structure and properties of ceramics for microwave absorption or transmission at high-temperatures* [J]. *International Materials Reviews*, 2022, 67(3): 266-297.
- [8] Kim K J, Rupp J L M. *All ceramic cathode composite design and manufacturing towards low interfacial resistance for garnet-based solid-state lithium batteries* [J]. *Energy & Environmental Science*, 2020, 13(12): 4930-4945.
- [9] Wei Z Y, Meng G H, Chen L, et al. *Progress in ceramic materials and structure design toward advanced thermal barrier coatings* [J]. *Journal of Advanced Ceramics*, 2022, 11(7): 985-1068.
- [10] Yan F, Bai H, Zhou X, et al. *Realizing superior energy storage properties in lead-free ceramics via a macro-structure design strategy* [J]. *Journal of Materials Chemistry A*, 2020, 8(23): 11656-11664.
- [11] Wong Villanueva J L, Kidokoro T, Seta F. *Cross-border integration, cooperation and governance: A systems approach for evaluating "good" governance in cross-border regions* [J]. *Journal of Borderlands Studies*, 2022, 37(5): 1047-1070.
- [12] Durand F, Decoville A, Knippschild R. *Everything all right at the internal EU borders? The ambivalent effects of cross-border integration and the rise of Euroscepticism* [J]. *Geopolitics*, 2020, 25(3): 587-608.
- [13] Brunet-Jailly E. *Cross-border cooperation: a global overview* [J]. *Alternatives*, 2022, 47(1): 3-17.
- [14] Abdeljaber O, Al-masaed S, Azam S M F, et al. *The role of trade integration and cross-border entrepreneurship in international relations: A moderating role of infrastructure* [J]. *Croatian International Relations Review*, 2021, 27(87): 63-94.
- [15] Mendoza J E, Dupeyron B. *Economic integration, emerging fields and cross-border governance: The case of San Diego-Tijuana* [J]. *Journal of Borderlands Studies*, 2020, 35(1): 55-74.
- [16] Weber F. *Cross-border cooperation in the border region of Germany, France, and Luxembourg in times of*

*Covid-19[J]. European Societies, 2022, 24(3): 354-381.*

[17] Cappellano F, Sohn C, Makkonen T, et al. *Bringing borders back into cross-border regional innovation systems: Functions and dynamics [J]. Environment and Planning A: Economy and Space, 2022, 54(5): 1005-1021.*

[18] Korhonen J E, Koskivaara A, Makkonen T, et al. *Resilient cross-border regional innovation systems for sustainability? A systematic review of drivers and constraints [J]. Innovation: The European Journal of Social Science Research, 2021, 34(2): 202-221.*

[19] Böhm H. *The influence of the Covid-19 pandemic on Czech-Polish cross-border cooperation: From debordering to re-bordering? [J]. Moravian Geographical Reports, 2021, 29(2): 137-148.*

[20] Novotný L, Böhm H. *New re-bordering left them alone and neglected: Czech cross-border commuters in German-Czech borderland[J]. European Societies, 2022, 24(3): 333-353.*