

From Cultural Resources to Design Innovation: A Study on the Transformation Pathway of Integrating Regional Culture into Product Design Education

-- Taking the Teaching Practice for the Product Design Major at Jingdezhen Ceramic University as an Example

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Abstract: Regional culture serves as the foundational core of product design innovation; facilitating the transformation of regional cultural resources into practical design applications represents a key direction for reforming product design curricula. Using the teaching practice of the Product Design program at Jingdezhen Ceramic University as a case study, this paper examines the practical challenges encountered in translating ceramic regional culture into educational practice and establishes a transformation framework encompassing "Analysis and Organization – Instructional Design – Implementation and Application – Feedback and Refinement." By integrating the intangible cultural heritage of Jingdezhen ceramics with local industries, this study explores innovative teaching approaches to address common pedagogical challenges—such as the overuse of cultural symbols, the disconnect between artistic expression and technical skills, and the separation of design from market realities—thereby transforming local cultural resources into educational strengths. This approach aims to cultivate design professionals who possess cultural literacy, innovative capabilities, and market awareness, while also providing a valuable reference for curriculum reform initiatives at similar art institutions.

Keywords: Regional Culture; Product Design; Teaching Transformation; Design Innovation; Jingdezhen Ceramics.

1. Introduction

Cultural empowerment of design innovation serves as a key driving force behind the integrated development of the cultural and creative industries and the real economy; as a result, product design education is placing increasing emphasis on exploring local cultures and translating them into contemporary contexts. The millennia-old ceramic heritage of Jingdezhen provides unparalleled resources for design education—resources that have been leveraged in the teaching practice of the Product Design program at Jingdezhen Ceramic University. However, challenges remain in this educational process, such as the fragmented utilization of cultural resources and the disconnect between theoretical instruction and practical application; students often simply repurpose traditional visual symbols, leading to severe homogenization of their designs and inadequate market readiness. Drawing upon this university's teaching practices, this paper identifies existing challenges, establishes a pathway for transforming regional cultural resources into educational tools, and aims to foster the synergistic development of cultural preservation, talent cultivation, and industrial empowerment. [1]

2. The Core Value and Logic of Integrating Regional Culture into Product Design Education

2.1. Regional Culture Provides an Innovative Foundation for Product Design Education

Cultural diversity represents a core competitive advantage in modern product design. In the context of industrial mass

production, purely functional design often fails to meet consumers' growing demand for personalization and premium quality; thus, cultural empowerment has emerged as a key breakthrough for product innovation. The ceramic culture of Jingdezhen encompasses both material and spiritual resources: on the material level, these include ancient kiln sites, classic vessel forms, traditional decorative patterns, and ceramic manufacturing techniques; on the spiritual level, they encompass the spirit of craftsmanship, local ceramic culture, and traditional ceramic aesthetics. The unique local ceramic cultural resources enable students to transcend the limitations of homogeneous design approaches, integrating traditional essence with contemporary aesthetics into their works and thereby developing a distinctive design language characterized by the distinctive charm of porcelain. [2]

2.2. Teaching Transformation Serves as an Important Vehicle for the Revitalization and Preservation of Regional Culture

Traditional regional cultural preservation primarily relies on master-disciple teaching methods and static museum exhibitions; however, these approaches suffer from limited dissemination channels and a monolithic inheritance model, making them ill-suited to meet the demands of cultural revitalization and adaptive utilization in the modern era. University design education serves as a vital platform for the innovative preservation of regional cultures; through classroom instruction, practical training, and community outreach, it transforms static cultural resources into creative products. The product design discipline, characterized by its innovative, practical, and market-oriented nature, enables the integration of traditional ceramic techniques and cultural

heritage into contemporary products, facilitating the entry of niche ceramic cultures into the mainstream consumer market and achieving the dynamic, living preservation of regional cultures.

2.3. Aligning Industry-Education Integration with Local Industrial Talent Demands

The Jingdezhen ceramic industry is currently undergoing a phase of transformation and upgrading; the production capacity for traditional household ceramics and artistic ceramics has reached saturation, prompting the industry to shift its focus toward cultural and creative ceramics, smart ceramics, and premium ceramics. There is an urgent market demand for versatile design professionals who possess expertise in ceramic craftsmanship, modern design, market dynamics, and a deep understanding of local culture. Integrating regional ceramic culture into product design education can align with the labor market needs of the local ceramics sector, bridge the gap between academic teaching and industrial practice, enhance the relevance of talent development to market demands, and inject innovative momentum into the high-quality growth of the local ceramics and cultural and creative industries.

3. Current Challenges in Integrating Regional Culture into Product Design Education – A Case Study of Jingdezhen Ceramic University

Based on course assignments, graduation projects, and entries in academic competitions, the integration of regional ceramic culture into teaching has already yielded preliminary success; however, significant gaps remain in areas such as resource utilization, curriculum design, practical teaching, and evaluation mechanisms. [3]

3.1. Fragmented Utilization of Cultural Resources and Insufficient Depth of Transformation

The integration of ceramic culture into classroom teaching is often limited to a superficial, fragmented level. Teachers typically provide patterns or vessel forms for students to copy and assemble, without offering in-depth interpretations of the underlying craftsmanship principles, cultural symbolism, traditional aesthetics, or humanistic spirit. As a result, students merely acquire the external forms without grasping the cultural essence; their works often consist of mere accumulation of symbols, lacking cultural reinterpretation or emotional expression. Furthermore, the cultural resources utilized in teaching have not been systematically organized; their selection is rather arbitrary, and no resource database or transformation framework tailored to product design education has been established, which hinders the deep integration of cultural resources.

3.2. Inadequate Alignment of the Curriculum System and a Single Integration Approach

The current curriculum is predominantly composed of general design courses, with a high proportion of courses covering design fundamentals, software, and functional design; however, specialized courses focused on ceramic culture and cultural transformation are insufficiently offered, resulting in gaps across different educational stages. The

foundational courses for lower-year students lack exposure to regional culture, leading to weak students' cultural awareness; meanwhile, the integration of cultural elements into the specialized courses for higher-year students is often forced or unnatural. The teaching approach overemphasizes theoretical instruction while neglecting practical training; it primarily relies on classroom lectures and case studies, lacking contextual learning experiences, hands-on craft practice, and project-based training. As a result, students lack practical experience in ceramic fabrication, and the technical feasibility of their design proposals is often low—frequently resulting in designs that are "beautiful but not practical," which violates the fundamental principles of product design regarding usability and manufacturability.

3.3. Practical Teaching is Disconnected from The Industry, With Weak Market Relevance.

Product design is an applied discipline with a strong emphasis on practical application and market orientation; however, campus-based practical activities often revolve around coursework assignments and academic competitions, placing excessive focus on conceptual creativity while neglecting real-world industrial considerations such as manufacturing costs, mass-production standards, and brand management. The ceramic-themed designs produced by students are predominantly conceptual works—featuring innovative forms that do not comply with firing or mass-production requirements, nor do they align with actual consumer scenarios, making it difficult to commercialize them. The collaboration between academia and industry in talent development remains superficial; industry mentors rarely visit campuses, and there is a lack of a regular, end-to-end practical training mechanism for school-industry projects, making it challenging for students to gain exposure to frontline industry standards—thereby creating a misalignment between talent development and industry demands.

3.4. The Teaching Evaluation System is Overly Simplistic and Lacks Sufficient Guidance.

Traditional curriculum evaluation focuses primarily on visual design, creative expression, and technical application, with limited emphasis on the ability to explore and transform cultural heritage, the practical implementation of craftsmanship, and the degree of market relevance. The evaluation process is predominantly conducted by in-school teachers, while intangible cultural heritage inheritors, corporate designers, and market practitioners participate to a lesser extent. This singular evaluation approach encourages students to pursue visual impact at the expense of cultural expression and practical application, thereby hindering the transformation of regional culture into high-quality design works.

4. Constructing a Transformation Pathway for Integrating Regional Cultural Resources into Product Design Education

To address the aforementioned challenges, and in alignment with Jingdezhen's ceramic resources and its professional talent development objectives—guided by the

principles of cultural preservation, talent cultivation, and industrial support—a comprehensive teaching transformation system encompassing "analysis and organization – instructional design – implementation and application – feedback and refinement" has been established, enabling the continuous conversion of ceramic cultural resources into instructional materials.

4.1. Systematically Organize Regional Cultural Resources to Establish a Teaching Resource Repository.

This initiative brings together enterprises, industry experts, teachers, and students to systematically explore the ceramic culture of Jingdezhen and establish a teaching resource platform tailored for product design majors. The platform is divided into three sections: first, ceramic visual graphic resources, encompassing patterns such as blue-and-white, famille rose, and Linglong designs, as well as traditional vessel forms; second, craft technology resources, covering processes and technical specifications—including clay shaping, surface finishing, glazing, firing, and carving; and third, humanistic spirit resources, including ceramic folklore, the spirit of craftsmanship, traditional aesthetics, and the historical evolution of ceramic design.

By leveraging information technology to establish an online database that aggregates high-definition images, craftsmanship videos, intangible cultural heritage materials, and exemplary cultural and creative case studies, this approach guides students to move beyond a rigid mindset of mechanical replication of symbols. Through processes such as element extraction, deconstruction and recombination, and re-creation of cultural connotations, students are enabled to interpret the cultural significance underlying traditional artifacts. By integrating the functional requirements, usage contexts, and public aesthetic preferences of contemporary products, they achieve a modern cultural translation—thereby addressing the superficial nature of cultural application at its root.

4.2. Restructure the Layered Curriculum System to Achieve Deep Integration of Culture and Teaching.

In line with the professional talent development program, a tiered curriculum module titled "General Education and Professional Educational Practice Extension" has been established. This module covers the entire learning journey – from the cognition and understanding of ceramic culture to its practical application – thereby addressing the issues of fragmented curricula and awkward cultural integration.

For lower-grade students, cultural enlightenment is introduced; courses such as "Design Expression" and "Fundamentals of Composition" incorporate the study of ceramic form, glaze colors, and decorative patterns. Additionally, an introductory general education course titled "An Overview of Jingdezhen Ceramic Culture" is offered to help students develop an understanding of ceramic culture and lay a solid foundation for cultural transformation.

The middle-grade curriculum focuses on enhancing professional competencies; within courses such as "Product Form Design" and "Cultural and Creative Product Design," specialized modules on ceramic cultural creativity are incorporated, covering topics including the contemporary reinterpretation of traditional ceramics, everyday ceramic

products, and the design of intangible cultural heritage (ICH)-based creative products. ICH inheritors are invited to conduct practical training sessions at the school, enabling students to master the fundamental ceramic production processes and to better understand the relationship between design concept and practical fabrication.

The senior-year curriculum focuses on the practical implementation of innovation; the "Special Topic Design" and "Graduation Design" courses incorporate real-world projects from local enterprises, assigning design tasks such as innovative everyday ceramics design, cultural and tourism-related creative products, and the revitalization of intangible cultural heritage, thereby guiding students to conduct their designs with a market-oriented approach. Additionally, the curriculum introduces AI-assisted design and parametric design methodologies to explore pathways for integrating intangible cultural heritage with digital design, thereby enhancing the industrial value of the students' works.

4.3. Establish a Multidimensional Practical Platform to Facilitate the Implementation and Commercialization of Research Outcomes

Establish a four-dimensional integrated practical model comprising "on-campus practical training + intangible cultural heritage practice + university-enterprise collaboration + competition-driven approach," enabling students to "learn through teaching, practice through doing, perform through innovation, and generate value through competition."

The university has enhanced its campus facilities by establishing a ceramic arts laboratory and a computer-aided design studio, dedicated to refining design concepts and iterating model prototypes; additionally, off-campus practice bases have been set up in the Ancient Kiln Exhibition Area, the Craftsmen's Studio, and the Cultural and Creative Industry Park to facilitate field research and hands-on practice, enabling students to gain deeper insight into cultural significance and draw design inspiration. The university has further strengthened its industry-academia collaboration by building a corporate mentor network, integrating production standards and market dynamics into the classroom curriculum, and engaging students throughout the entire product development lifecycle—including product planning, prototyping, and cost estimation—to cultivate a commercial design mindset.

By leveraging various design competitions and cultural and creative incubation projects, students are organized to participate in industrial design contests and ceramic cultural and creative competitions—using these events as a means to foster learning, promote the incubation of high-quality design outcomes, and facilitate the transformation of classroom assignments into market-ready products. [4]

4.4. Establish a Diversified Evaluation System to Optimize Instructional Orientation

Break away from a single aesthetic evaluation framework and establish a four-dimensional assessment criterion encompassing "cultural depth + innovative design + industrial implementation + market value"; simultaneously, assemble a diverse panel of evaluators consisting of university faculty, intangible cultural heritage inheritors, industry mentors, and market practitioners.

Cultural fit assesses the depth of cultural exploration and the rationality of element transformation, avoiding mere symbolic superficial juxtaposition; Creative novelty evaluates innovations in form, function, context, and aesthetics; Technical feasibility assesses the practical implementability by considering craftsmanship, mass-production conditions, and production costs; Market alignment evaluates the product's practical value and commercial potential from both industrial and consumer perspectives.

Establish a teaching iteration mechanism to update instructional content, teaching methods, and practical projects based on evaluation outcomes, thereby creating a closed-loop teaching system encompassing "teaching – practice – evaluation – optimization" that continuously enhances the quality of transforming cultural resources into effective instructional materials.

5. Teaching Practice Outcomes and Reflections

5.1. Teaching Practice Outcomes

Since the implementation of this end-to-end teaching model, students' cultural understanding, innovative thinking, and practical craftsmanship skills have been significantly enhanced; the issue of homogenized design has been alleviated; a large number of ceramic design works—characterized by cultural depth, innovation, and practicality—have been produced; and these works have achieved outstanding results in academic and professional competitions at various levels. The quality of talent development has been elevated; the proportion of graduates entering local ceramic and cultural and creative enterprises for employment has been increasing annually; and the alignment between the talent supply and industrial job requirements has continued to strengthen.

Some students have successfully commercialized their original everyday ceramic and cultural creative products, revitalizing traditional ceramic intangible cultural heritage techniques, integrating traditional culture into everyday life, and injecting new vitality into the local ceramic industry. This curriculum framework also serves as a practical reference for other local art academies across China seeking to implement design education reforms that incorporate local culture.

5.2. Teaching Practice Reflection

There are still certain shortcomings in the teaching practice: First, there is insufficient integration of digital technologies into ceramic design; students lack adequate proficiency in AI-driven and parametric design techniques, and the integration of traditional craftsmanship with digital tools remains inadequate; Second, the capacity for product commercialization is limited—many outstanding student projects remain at the stage of sample display, making it difficult to achieve large-scale production or brand development; Third, cross-domain collaboration is insufficient; further deepening is needed in the integration of product design with cultural and tourism development, technological innovation, and rural industrial partnerships. Moving forward, the teaching program will strengthen the

development of digital-based curricula, refine the product commercialization mechanism, expand industry-education integration initiatives, and continuously optimize the teaching and development model for traditional cultural resources.

6. Conclusion

The transformation of regional cultural resources into teaching materials represents a key direction for teaching reform in the product design program, as well as an effective approach to the dynamic preservation of regional culture, the targeted cultivation of design professionals, and the empowerment of local industries. Drawing on the teaching experience of the Product Design program at Jingdezhen Ceramic University, this paper addresses challenges encountered in teaching practice—such as the limited utilization of cultural resources, inadequate integration of courses, weak practical application, and simplistic evaluation mechanisms—by proposing a solution based on "platform development, modular curriculum design, multi-dimensional implementation, and dynamic assessment," thereby facilitating the efficient conversion of regional culture into tangible design outcomes.

Practical experience has demonstrated that this teaching model effectively enhances students' humanistic literacy and innovative capabilities, addresses issues such as design homogenization and excessive conceptualization of design proposals, and better aligns with the needs of local enterprises. Future teaching initiatives will further explore regional ceramic art resources, deepen university-enterprise collaboration, foster the integration of traditional craftsmanship with digital technologies, and advance interdisciplinary research; they will also establish pathways for transforming cultural resources into curricular materials, thereby promoting the synergistic development of regional cultural construction, design talent cultivation, and the local economy, and nurturing applied art and design professionals with cultural awareness, innovative mindset, and strong social responsibility.

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