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A Cultural Innovation-Oriented Framework for Industry–Education Integration in Regional Ceramic Product Design

-- A case study of the undergraduate Product Design program at Jingdezhen Ceramic University

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Abstract: Education in regional ceramic product design faces a disconnect among cultural understanding, technical implementation, and market judgment. Drawing on curriculum reform materials from the undergraduate Product Design program at Jingdezhen Ceramic University, this article examines the organizational rationale and implementation of industry–education integration oriented toward cultural innovation. It presents a framework that repositions regional ceramic culture from a source of design motifs to a starting point for innovation. The framework connects cultural analysis, industry-based validation, pedagogical adaptation, and market feedback in an iterative cycle, supported by industry mentors embedded in courses, coordinated guidance across the ceramic value chain, and assessment of learning processes, outcomes, and individual progress. The analysis suggests that stronger industry–education integration requires reciprocal scrutiny of cultural and industrial considerations while preserving space for cultural exploration. Available course information offers preliminary insights into implementation; however, the framework's educational effectiveness requires longitudinal investigation and evidence from multiple sources.

Keywords: Cultural innovation, regional ceramics, product design, industry–education integration, educational framework.

1. Introduction

The development of Jingdezhen's ceramic industry places increasingly complex demands on design graduates. They need both an understanding of regional culture and the ability to translate cultural resources into products that can be manufactured, communicated to audiences, and refined through successive iterations. The establishment of the Jingdezhen National Ceramic Culture Inheritance and Innovation Pilot Zone offers new opportunities for this transition. Nevertheless, establishing an institutional platform does not automatically improve educational quality. A central challenge for regional ceramic product design education is therefore to help students exercise informed judgment across cultural meaning, production conditions, and market demand.

Drawing on its resources in ceramic culture and design education, the Product Design program at Jingdezhen Ceramic University has explored university–industry partnerships, collaborative curriculum development, and practice-based teaching. When industry–education integration is limited to resource coordination and practical training arrangements, regional culture can become little more than a repository of motifs, while industrial considerations are reduced to manufacturing constraints. Culture and industry may both enter the classroom without becoming meaningfully connected within teaching and learning. Reform thus requires changes to course tasks, supervision, and assessment, rather than simply adding enterprise participation.

Based on materials documenting relevant curriculum reforms, this article presents a case analysis of the role of cultural innovation in industry–education integration. It examines a shift from treating cultural resources as design materials to using an understanding of culture as a starting point for innovation. The analysis focuses on course-level organizational mechanisms and the limits of their applicability. Competition results and satisfaction feedback from individual teaching initiatives are not treated as direct causal evidence of improved student competence.

2. Challenges in Connecting Culture and Industry in Ceramic Design Education

The difficulty of teaching regional ceramic design stems not only from insufficient cultural knowledge or practical experience, but also from the weak connection between them. In some teaching sequences, culture enters preliminary research through patterns, vessel forms, and glaze colors, whereas industry requirements emerge later as constraints on cost and mass production. Culture supplies inspiration, while industry screens proposals. Without sustained reciprocal feedback, this sequence creates three interrelated problems.

First, cultural expression can remain at the level of accumulated symbols. Students may emphasize the visual recognizability of regional elements while paying less attention to the lifestyles, practices, and systems of meaning behind them. Culture then becomes surface decoration rather than a source of product functionality, structure, and experience. Although the resulting objects may convey a regional identity, they offer limited interpretation of its cultural significance.

Second, formal expression and technical implementation can become disconnected. Students may develop and refine forms without an intuitive understanding of clay properties, firing behavior, glaze coloration, or batch production. When technical input arrives too late, proposals are often simplified or distorted to accommodate manufacturing. This prevents

material properties and production processes from contributing positively to creative development.

Third, design judgment may be detached from market understanding. Students may regard the market as a boundary that restricts creativity, overlooking how brand positioning, user contexts, and distribution channels can inform product definition. If pricing and sales potential are discussed only at the end of a course, students are unlikely to develop a comprehensive understanding of product development.

These problems indicate that cultural innovation must extend beyond modernizing traditional cultural elements to address product definition, modes of use, and value expression. Industry–education integration should bring cultural research, technical experimentation, and market analysis into the same design task, enabling students to develop proposals under authentic constraints and revise their judgments in response to feedback.

3. Developing a Framework for Industry–Education Integration through Cultural Innovation

3.1. Educational Objectives: From Applying Motifs to Cultural Translation

Education oriented toward cultural innovation should develop students' capacities for cultural translation, technical implementation, brand understanding, and systems-oriented design. Cultural translation here means interpreting regional traditions of making in relation to contemporary life. It involves translating customary practices, aesthetic principles, and craft knowledge into product functions, proportions, configurations, and interactions, rather than simply reproducing traditional appearances.

For example, research on traditional tea ware should examine not only vessel forms and patterns, but also tea-sharing practices, gripping actions, and relationships among objects in a set. Similarly, research on regional glaze colors should consider material expression and contexts of use. Design is thereby grounded in cultural understanding: culture becomes a basis for identifying problems and developing proposals, rather than merely something to be represented.

The Modern Design Industry College provides an organizational basis for interdisciplinary collaboration and access to industry resources. Integrating art, engineering, and business within teaching brings cultural judgment, formal creation, material production, and value realization into a shared design task. Students can then consider their relationships from the outset of concept development instead of completing separate modules in sequence.

3.2. Curriculum Restructuring: Embedding Industry Mentors in Cultural Translation

Teaching materials for the course Regional Cultural and Creative Product Design describe an initiative that brings industry professionals into the classroom. By involving mentors from different professional backgrounds, the initiative links cultural research, brand strategy, and technical development [1,2]. Professionals managing regional cultural intellectual property help students connect local narratives with product positioning. Brand designers guide user analysis, visual communication, and product range development. Practitioners experienced in revitalizing traditional crafts provide advice on cost, forming processes, and suitability for distribution channels.

The value of mentor participation lies in changing how design problems are framed in the classroom. Selecting cultural symbols becomes more than a visual exercise: students must explain their relevance to users and product positioning. Likewise, technical feasibility becomes more than an end-of-course judgment; it informs concept generation and structural refinement. Cultural research and industry judgment repeatedly enter the design process at different stages, enabling reciprocal adjustment.

Supervision can be organized around cultural analysis, product definition, proposal development, and prototype validation. At the outset, students submit cultural research and identify its sources, explaining how their design themes relate to everyday contexts. During development, sketches, models, and discussions of manufacturing processes support comparisons among alternatives. Later, physical prototypes and user feedback are used to test proposals and justify revisions. Course teams need to translate industry mentors' advice into actionable and assessable learning tasks.

These activities support an iterative cycle of cultural analysis, industry-based validation, pedagogical adaptation, and market feedback. Cultural analysis generates design questions; industry-based validation identifies the conditions for implementation; pedagogical adaptation converts professional experience into cases, tasks, and assessment requirements; and market feedback informs revisions to both designs and course content. The stages do not form a strictly one-way sequence. Prototype testing and feedback may require students and instructors to revisit earlier research.

3.3. Collaborative Support: From Isolated Partnerships to Guidance across the Value Chain

A combination of mentors specializing in cultural intellectual property development, brand strategy, the contemporary interpretation of traditional aesthetics, and quality control for cultural tourism products can expose students to the full process from cultural research to product application. Mentors may offer differing recommendations. Such differences can become productive teaching material: weighing cultural expression, user experience, and cost, and providing evidence for these choices, are important exercises in professional judgment.

University faculty and industry mentors should have clearly differentiated responsibilities. Faculty oversee research methods, progress, and learning objectives. Industry mentors contribute information on craft processes, production, and markets, and participate in joint reviews. Professional experience should not replace pedagogical judgment. Instead, its complexity should be calibrated and tasks broken down so that undergraduate students can understand the relevant conditions and test their implications.

Collaboration also requires institutional support. Industry colleges and university–enterprise partnerships provide practical resources [3,4], but resource sharing must translate into defined mentoring hours, prototyping facilities, arrangements for using student work, and sustained feedback. Incorporating these requirements into course operation can reduce dependence on the occasional contributions of individual faculty members or industry practitioners.

3.4. Assessment Reform: Evaluating Cultural Translation and Learning Gains

Course assessment should combine evaluation of learning processes, final outcomes, and individual progress. Process assessment examines source analysis, problem definition, comparison of proposals, and technical experimentation. Outcome assessment considers functionality, form, technical execution, and cultural expression. Assessment of learning gains compares changes in students' judgment over the course, avoiding an exclusive focus on the completeness or polish of final submissions.

The assessment of cultural translation should be evidence-based. Students need to explain how cultural research informed design decisions, which industry recommendations they adopted, and how revisions improved their products. Research portfolios, successive sketches, prototype records, and reflective reports provide evidence that reduces reliance on subjective impressions of whether a product has sufficient "cultural character."

Joint assessment also requires explicit boundaries. Industry mentors primarily assess production and application conditions, university faculty evaluate achievement of learning objectives, and user feedback helps identify usability problems. Proposals that do not yet meet mass-production requirements but warrant further exploration should be judged in relation to the depth of their research and the quality of their improvements, preserving reasonable scope for experimentation.

4. Practice-Based Feedback and Critical Reflection

4.1. Distinguishing Course Feedback from Evidence of Competence Development

Recent teaching practice has produced observable outcomes. In the 2026 China Good Creative Design Competition, students in the program received three first prizes, six second prizes, and two third prizes. The award-winning projects were characterized less by dense use of regional symbols than by close connections between cultural narratives and functional reasoning. Course-level feedback is also notable: all 28 students in Regional Cultural and Creative Product Design completed a full proposal for their respective design tracks, and overall course satisfaction was reported as 100%. Satisfaction data alone cannot establish competence gains. Read alongside instructors' observations of substantial improvements in cultural translation, brand analysis, and technical implementation, however, these reports suggest that sustained industry mentor involvement may have changed how students understood their design tasks.

At the level of teaching mechanisms, industry mentors can expose students to authentic product development conditions, while cultural investigation combined with technical discussion offers opportunities to exercise integrated judgment. Whether these effects recur consistently requires further examination through classroom records, student interviews, and analysis of design work. Future studies could use comparable tasks before and after a course, anonymized assessment, and follow-up investigations of competence transfer to subsequent courses to strengthen the validity of their conclusions.

4.2. Maintaining a Productive Tension between Industry Validation and Cultural Exploration

Industry mentors contribute practical experience concerning cost, manufacturing processes, and markets, but short-term commercial judgment should not be the sole reference point. Innovation grounded in regional culture may challenge established product categories, and some exploratory proposals may lack clear short-term sales prospects. Overemphasis on industry adoption can steer students toward safer choices, limiting research initiative and experimentation.

Within shared educational objectives, applied development and exploratory research can therefore be differentiated. Applied tasks emphasize cost, quality control, and channel validation; exploratory tasks prioritize cultural questions, material experimentation, and the rationale for innovation. Both require substantiated arguments, but they need not produce identical types of outcomes or be judged by identical standards. This distinction helps prevent industry requirements from displacing cultural judgment.

4.3. Strengthening the Sustainability and Transferability of Collaboration

Experienced industry mentors have limited time, and the success of a demonstration course does not automatically establish routine practice across a curriculum. Wider implementation requires a mentor pool, defined supervision stages, and formal recognition of teaching contributions. Representative cases and recurring technical problems should be developed into shared teaching materials to reduce repeated coordination work. University and industry partners should also agree on prototyping costs, intellectual property, student authorship, and arrangements for subsequent product development, thereby establishing stable expectations.

Assessment across courses similarly requires usable rubrics. Cultural understanding can be evaluated through source reliability, contextual interpretation, and relevance to design decisions. Technical competence can be assessed through problem identification, the rationale for experimentation, and the quality of revisions. Integrated judgment can be examined through comparisons among alternatives and the justification of decisions. Joint scoring and case discussion can help calibrate standards, reduce inconsistencies, and turn experience-based practice into a sustainable educational mechanism.

5. Conclusion

Industry–education integration oriented toward cultural innovation requires a reconfiguration of the relationship between culture and industry within the curriculum. Culture becomes a basis for framing design problems rather than a stock of motifs, while industry shifts from screening final proposals to providing feedback throughout the design process. Both contribute to product definition and proposal revision. Relevant course initiatives in the Product Design program at Jingdezhen Ceramic University offer practical insights into this transition.

Further reform should be organized around course tasks and supported by joint supervision and evidence-based assessment, while maintaining a balance between industrial feasibility and cultural inquiry. Teaching portfolios, longitudinal follow-up, and evaluation by multiple

stakeholders are needed to examine the development of students' cultural translation and integrated design capabilities. These measures can help translate regional cultural resources into a durable basis for design education.

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