

A Systematic Exploration of Innovation and Entrepreneurship Talent Cultivation in Vocational Design Education: Integrating Intangible Cultural Heritage Ronghua with Contemporary Design Pedagogy

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ABSTRACT

This paper uses the integration of Ronghua, an intangible cultural heritage (ICH) craft, with contemporary design as a case study to explore a systematic pathway for cultivating innovation and entrepreneurship (I&E) talents in vocational design education. Based on a triadic framework of "cultural inheritance–creative design–commercial transformation," the study develops a three-dimensional, four-level teaching system and a four-dimensional implementation mechanism. Through empirical research across three vocational institutions, the paper evaluates the model's impact on students' design thinking, entrepreneurial skills, and cultural literacy. The findings show that integrating traditional craftsmanship into modern education supports ICH transmission and cultivates design talent with interdisciplinary thinking and market-oriented capabilities. The study also identifies limitations and proposes future research directions.

KEYWORDS

Vocational Education; Design Education; Intangible Cultural Heritage; Ronghua; Innovation and Entrepreneurship; Curriculum Reform

1 Introduction

As part of China's innovation-driven development strategy, vocational colleges are central to cultivating application-oriented talents, yet current educational models often suffer from homogenization and a lack of cultural depth. Design disciplines, known for their creativity and practical orientation, have become key areas in the reform of innovation and entrepreneurship (I&E) education, but fail to meet the demand for interdisciplinary talent that combines craftsmanship, creativity, and commerce. Simultaneously, traditional handicrafts like Ronghua face a transmission crisis, with only seven cities in China retaining official inheritors. The exquisite techniques and aesthetic values of Ronghua require revitalization through integration with modern education systems. This study uses Ronghua as a cultural medium to explore how traditional craftsmanship can be connected with contemporary design pedagogy. The study aims to create an integrated "ICH + I&E" educational model to fill the research gap in leveraging traditional culture for I&E education, propose practical strategies for curriculum and teaching redesign, and provide a model for the synergistic development of craft preservation, talent cultivation, and industry upgrading.

2 Literature review

2.1 I&E and design education evolution

Innovation and entrepreneurship (I&E) education in vocational colleges has shifted from basic entrepreneurial skills training to a comprehensive ecosystem that integrates innovation thinking, hands-on practice, and value creation. Models such as project-driven curricula, school-enterprise collaboration, and competition-based mechanisms are essential, particularly in design education, to bridge traditional craftsmanship and modern market demands. Despite the paradigm shift in design education towards innovation, challenges remain, including a shortage of dual-qualified instructors, misalignment between practice platforms and industry needs, and inadequate innovation competency evaluation systems.

2.2 ICH education and research gaps

The integration of intangible cultural heritage (ICH) into education enhances cultural awareness, creativity, and industrial transformation. Ronghua craftsmanship, with its rich techniques and aesthetic value, aligns with sustainable design principles. Vocational institutions are adopting models that combine ICH workshops, creative design, and product incubation. However, research in this area faces limitations due to the lack of systematic frameworks, early-stage integration of ICH and I&E, and insufficient empirical evidence. Successful international models highlight the importance of reinterpretation of cultural symbols, interdisciplinary teaching teams, and market-oriented practice platforms. This

study seeks to incorporate these elements for both theoretical and practical breakthroughs.

3 Construction of a systematic innovation and entrepreneurship talent cultivation framework in vocational design education

3.1 Goal orientation and core elements of talent development

The cultivation of innovation and entrepreneurship (I&E) talent in vocational design education should follow the principle of "craft as foundation, innovation as essence, and entrepreneurship as application." A four-dimensional framework is proposed: professional competence develops interdisciplinary skills in both traditional craftsmanship and modern design thinking; innovation literacy fosters creative problem-solving; entrepreneurial ability focuses on turning ideas into viable products; and cultural literacy enhances cultural responsibility and market awareness. This framework addresses the need for professionals who integrate intangible cultural heritage (ICH) with contemporary design practices and commercial operations. Education must evolve beyond traditional models to emphasize innovation, interdisciplinary integration, and cultural relevance.

3.2 Innovative design of a systematic teaching framework

This study proposes a "Three-Dimensional, Four-Level" teaching framework (Figure 1). At the curricular level, it introduces a three-tier course structure: foundational courses in cultural studies, core innovation modules, and advanced entrepreneurship courses, with Ronghua craft instruction integrated into product design and brand strategy. The practical training follows a four-stage model—cognition, imitation, innovation, and entrepreneurship—using studio practice, project-based learning, and entrepreneurial incubation to develop student competencies. A multidimensional assessment system evaluates creativity, cultural integration, and market viability. The framework features a "tri-mentor mechanism," involving ICH masters, professional designers, and industry entrepreneurs for comprehensive guidance throughout the process of craft transmission, design, and business development. Additionally, a "real-world project-driven" approach allows students to develop cultural and creative products through stages such as market research, concept generation, prototyping, and marketing strategy, equipping them with both design and entrepreneurial skills.

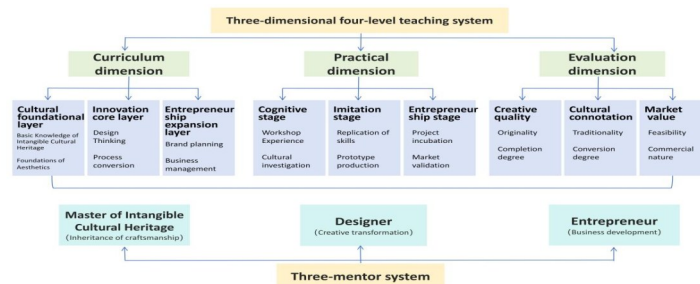


Figure 1 The "Three-Dimensional, Four-Level" Teaching Framework

3.3 Implementation safeguards and synergistic mechanisms

To implement the proposed framework, three support systems are necessary: a resource system with a digital ICH repository and interdisciplinary maker spaces, an institutional system with flexible academic structures, and a quality assurance system with dual-track evaluation. A key enabler is a collaborative mechanism linking academic institutions, industry, government, and heritage organizations, fostering a synergistic ecosystem that integrates education, talent, industry, and innovation. This approach preserves ICH while cultivating I&E talent, infusing traditional craftsmanship with innovation and enriching vocational design education with cultural depth.

4 Integrating Ronghua intangible cultural heritage with contemporary design education

4.1 The craft essence and cultural connotation of Ronghua

Ronghua, a key representation of China's intangible cultural heritage (ICH), dates back to the Ming and Qing dynasties. Initially exclusive to the imperial court, it later became a popular art form in folk festivals. Its core value lies in three dimensions: technically, it involves an intricate eight-step process—thread splitting, silk slicing, fluff brushing, wire shaping, trimming, twisting, refining, and assembling—showcasing Eastern craftsmanship (Figure 2). Aesthetically, the

interplay of silk and metallic threads creates dynamic light and shadow effects, embodying classical Chinese beauty. Culturally, each floral motif symbolizes auspiciousness and blessings rooted in folk traditions.

Incorporating Ronghua into modern design education not only preserves traditional skills but also introduces students to the cultural codes of Chinese design philosophy. By deconstructing the process—from material selection to spatial construction—students learn how traditional crafts can be revitalized within contemporary design practices. This fusion of “craftsmanship + design thinking” cultivates a new generation of culturally grounded, creatively capable designers.

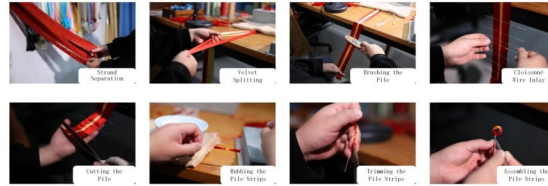


Figure 2 Process Flow of Ronghua (Velvet Flower) Craftsmanship

4.2 Pathways for the integration of traditional craft and contemporary design

The integration of Ronghua into modern design education spans four key dimensions. First, its rich color palette, including imperial blue and festive red, offers a culturally embedded reference for modern color design. Second, blending traditional silk with eco-friendly materials expands sustainable design possibilities. Third, Ronghua’s three-dimensional modeling principles inspire innovations in spatial design across product and fashion. Fourth, digital techniques like parametric design reinterpret traditional motifs, transforming heritage aesthetics into contemporary design vocabularies.

This integration follows a "deconstruction – translation – reconstruction" methodology, systematically re-expressing traditional crafts to meet contemporary needs. For example, the Fashion Design Department at Hunan University of Science and Technology incorporates Ronghua into its curriculum, encouraging students to apply these elements in garment, ornament, wall hanging, and lifestyle product design. This approach ensures both heritage preservation and market relevance (Figure 3 and 4).

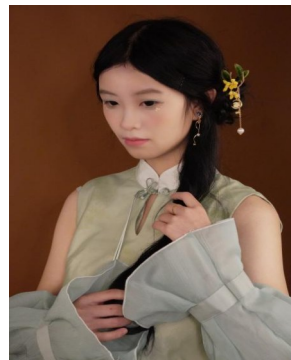


Figure 3 Integration of Ronghua Craft into Fashion Design Curriculum Practice



Figure 4 Innovative Wall Art Created with Ronghua Craft

4.3 Pedagogical innovation through practice-oriented models

A "three-dimensional linkage" teaching model promotes holistic learning through a three-phase curriculum—

"Traditional Craft Foundations–Creative Design Methods–Product Development Practice"—with project-based courses like Ronghua Craft and Fashion Accessory Development. A multi-layered learning environment, incorporating campus workshops, enterprise studios, and online museums, allows students to interact with physical artifacts and real-world projects. Assessment uses a multidimensional rubric focused on craftsmanship, creative transformation, and market feasibility. For example, a vocational college's "Resident ICH Master" program enabled students to transform Ronghua elements into cultural products, resulting in design patents and commercialization. This model fosters cultural understanding, creative interpretation, and entrepreneurial execution, offering a replicable approach for cultivating innovative talent rooted in traditional culture.

5 Conclusion and future directions

This study presents an innovative "cultural inheritance – creative design – commercial transformation" model for cultivating innovation and entrepreneurship (I&E) talent in vocational design education. By integrating Ronghua, an intangible cultural heritage (ICH), with contemporary design pedagogy, the study introduces a new paradigm of "modernizing traditional crafts." It offers a progressive training pathway and establishes a synergistic mechanism that links ICH preservation with talent development, resulting in dual breakthroughs in heritage conservation and educational innovation. This framework provides vocational institutions with a replicable model for training cultural and creative professionals.

Future research should focus on building digital ICH platforms using VR/AR technologies for immersive knowledge transmission. Strengthening a collaborative education system that integrates academia, industry, government, and culture will foster deeper industry-education integration. A big data-based career tracking system can enhance long-term talent evaluation. Vocational colleges should establish dedicated ICH innovation research centers to create a comprehensive training pipeline across "classroom–studio–market."

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About the Author

Jiang Tao, Associate Professor, Master's Degree Research Interests: Digitalization of Intangible Cultural Heritage, Vocational Education, Innovation and Entrepreneurship.

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