

# Research on the Development Path of Intangible Cultural Heritage Creative Products for Dahei River Qiandao Lake from the Perspective of School-Enterprise Collaboration

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**Abstract:** The living inheritance of intangible cultural heritage faces a structural tension between authenticity preservation and market-oriented expression. School-enterprise collaboration provides an organizational interface for resolving this tension. The Dahei River-Qiandao Lake region carries intangible cultural heritage resources formed by the integration of Mongol-Yuan culture and Central Plains agricultural culture, and its cultural codes are deeply bound to the spatial pattern of water areas and the agricultural-pastoral cycles. Based on an analytical framework consisting of four links-resource identification, value reconstruction, product transformation, and market adaptation-the investigation reveals that knowledge transfer losses at the linguistic interface, temporal interface, and evaluative interface constitute the core obstacles to deepening collaboration. Accordingly, this paper proposes the reconstruction of rights and responsibilities under the guidance of capability complementarity, a parametric translation mechanism for cultural genes, and a layered benefit-sharing system under dual rights confirmation, aiming to provide an operable theoretical path for cross-boundary cultural product development.

**Keywords:** School-enterprise collaboration; Intangible cultural heritage; Cultural and creative products; Dahei River-Qiandao Lake; Cultural translation

## Introduction

The development of intangible cultural heritage creative products requires both accurate interpretation of cultural meaning and effective expression of market value. The absence of either dimension will lead the products to fall into cultural hollowing-out or market marginalization. Universities possess systematic knowledge production capabilities, while enterprises have mature supply chain management and market operation experience. The collaboration between the two is regarded as an important pathway to bridge the gap between cultural interpretation and market expression. Existing studies have paid insufficient attention to the micro-level knowledge interaction mechanisms in school-enterprise collaboration, and in particular, have overlooked the constraints imposed by the transmission efficiency between different knowledge paradigms on development outcomes. The Dahei River-Qiandao Lake area, as a zone where agricultural and pastoral cultures converge, provides a typical sample for examining the above issues due to the ecological relevance and spatial embeddedness of its intangible cultural heritage resources. This study focuses on the structural dilemmas of school-enterprise collaboration in this region, and conducts analysis around three dimensions: the necessity of collaboration, the interface of efficiency loss, and path optimization.

## 1. Theoretical Basis for the Development of Intangible Cultural Heritage Creative Products and the Logical Generation of School-Enterprise Collaboration

### 1.1 Product Transformation Mechanism of Intangible Cultural Heritage Resources

The transformation of intangible cultural heritage into cultural and creative products is essentially a cross-domain migration of cultural resources from the original contextual sphere to the commodity circulation interface. The Dahei River-Qiandao Lake area preserves folk handicrafts, festive rituals, and ecological knowledge systems imbued with Mongol-Yuan culture. Such resources possess distinctive

regional identity and living and fluid characteristics. There exists an inherent tension between the authenticity preservation imperative of intangible cultural heritage and the market-oriented orientation of cultural and creative products. Its resolution depends on establishing a hierarchical transformation mechanism, that is, distinguishing among the intangible cultural heritage resources the visual elements that can be extracted as symbolic materials, the production techniques that can be preserved as the core of craftsmanship, and the meaning structures that can be conveyed as cultural narratives, and correspondingly assigning them to different productization paths.

The key link in the transformation is not simply the extraction of materials, but lies in the reconstruction of the encoding-decoding relationship between traditional knowledge systems and modern aesthetic paradigms. The geometric patterns of folk embroidery in the Dahei River-Qiandao Lake area follow specific mathematical proportional relationships and orientational symbolic logic, while the formal language of traditional implements contains functional optimization strategies adapted to the water environment. Translating these deep-level rules into constraints and generative bases for product design, rather than simply printing the patterns onto generic carriers, constitutes the core proposition of product-oriented resource translation<sup>[1]</sup>.

### ***1.2 Structural Motivations for School-Enterprise Collaboration in ICH Creative Product Development***

School-enterprise collaboration is not an externally appended form of cooperation, but rather an organizational response intrinsically required by the development of intangible cultural heritage creative products. Universities possess systematic knowledge production capabilities in cultural resource organization, design innovation research and development, and brand system construction, while enterprises have advantages in market sensitivity, supply chain management efficiency, and channel deployment capabilities. At a deeper level, the realization of value in ICH creative products depends on dual precision—both thick cultural description and market-oriented expression. The former demands an anthropological understanding of culture, while the latter requires product-defining capability under commercial logic. The structural complementarity between these two heterogeneous knowledge production paradigms constitutes the fundamental motivation for school-enterprise collaboration to engage in this field.

The "ecological relevance" feature of the intangible cultural heritage items in the Dahei River-Qiandao Lake area further reinforces the necessity of collaboration. A large number of ICH practices have emerged around water utilization, seasonal migration, and pastoral nomadic activities, and their cultural codes are deeply bound to specific natural rhythms and spatial patterns. This binding relationship provides an irreplaceable foundation of materials for the localized narrative of cultural and creative products, while simultaneously imposing structural constraints on their product-oriented migration after being detached from the original context. Neither universities' academic interpretation alone nor enterprises' market intuition alone can cope with this dual challenge. Therefore, collaborative engagement becomes a functional imperative.

### ***1.3 Construction of an Analytical Framework for the Development Path under the Collaborative Logic***

Based on the above analysis, this study constructs an analytical framework consisting of four links: resource identification, value reconstruction, product transformation, and market adaptation. The core assumption of this framework is that the effectiveness of school-enterprise collaboration does not naturally reside in the willingness to cooperate, but depends on whether the definition of rights and responsibilities of both parties in each link matches their respective capability endowments. The resource identification link is dominated by the university's cultural research capabilities, the product transformation link is dominated by the enterprise's engineering and technical capabilities, and the value reconstruction and market adaptation links require both parties to establish in-depth interactive decision-making mechanisms. This framework moves beyond the crude cooperative narrative of "universities provide intellectual input and enterprises provide capital," and shifts the analytical focus to the dynamic matching between the capability boundaries of collaborative subjects and the demands of each link.

The intangible cultural heritage resources in the Dahei River-Qiandao Lake area possess distinctive cultural characteristics of the agricultural-pastoral transitional zone. The design of their product development path needs to achieve full-chain integration from cultural semantic analysis to product

parametric design under this framework. Universities undertake the stratification of cultural value and the construction of interpretive frameworks for the intangible cultural heritage resources at the front end, while enterprises complete material selection, structural design, and process planning at the back end. The two parties collaborate in the value reconstruction link in the form of a joint work team. The four links are not in a linear sequential relationship, but rather form a cyclical structure containing feedback and iteration. This structural feature provides operable theoretical coordinates for the subsequent specific design of the development path<sup>[2]</sup>.

## **2. Development Potential and Collaborative Dilemmas of ICH Creative Products in the Dahei River-Qiandao Lake Area**

### ***2.1 Inventory of Regional ICH Resources and Layers of Cultural Value***

The river basin where the Dahei River-Qiandao Lake is located carries the historical accumulation of the agricultural-pastoral transitional zone, and its ICH resources cover multiple categories such as folk arts, traditional crafts, and folk activities. In the Dahei River (Hohhot) section, there remain traditional craft items such as paper-cutting, leather carving, fabric art, and printmaking, as well as performance items such as shoulder-borne folk performances and lantern shows introduced during festivals. In addition, there are ecological folk customs generated around water utilization and seasonal migration. From the perspective of stock structure, the ICH items in this region exhibit a notable feature of "ecological relevance"-a large number of ICH practices are deeply bound to specific natural rhythms, water spatial patterns, and agricultural-pastoral production cycles, with their cultural codes embedded in local survival experiences.

Further examination of its cultural value layers reveals three progressive dimensions. The surface layer consists of visual decorative symbol systems, such as auspicious patterns in paper-cutting, cloud patterns and animal totems in leather carving, and ethnic embroidery motifs in fabric art; the middle layer comprises programmable craft techniques and ritual procedures, including leather carving relief techniques, paper-cutting hollowing techniques, fabric art piecing and sewing, as well as programmed skills such as seasonal folk activity protocols formed around water utilization; the deep layer concerns the cognitive schema of the relationship between humans and nature, namely the spatial perception and ecological ethics formed through the long-term interaction between Mongol-Yuan culture and Central Plains agricultural culture. The values at different layers correspond to differentiated product transformation strategies, but most current development attempts remain at the extraction and transfer of surface symbols and have not yet reached the deep structure of cultural meaning. The development potential of regional ICH resources lies precisely in the process of value release that progresses step by step from the surface layer to the deep layer<sup>[3]</sup>.

### ***2.2 Functional Positioning and Misalignment of Subjects in the Current Development Model***

Observing the current development practices of ICH creative products in the Dahei River-Qiandao Lake area, one can identify a prevalent structural deficiency. The involvement of universities is mostly concentrated in the preliminary cultural research and conceptual design, while the participation of enterprises is postponed to the product manufacturing stage, and an effective "concept-to-product" conversion interface is lacking between the two. In the Dahei River basin, although ICH elements such as paper-cutting and leather carving have been incorporated into some creative products, they are mostly used for pattern extraction and surface decoration, lacking the capacity to transform the middle-layer craft procedures and deep-layer cognitive schemas. Performance items such as shoulder-borne folk performances and lantern shows introduced during ice and snow festivals and other cultural tourism activities mainly take the form of on-site experiences, and have not yet formed an effective connection mechanism with the regular development of creative products. In these practices, the participation of universities is relatively limited, and the collaboration between schools and enterprises is more manifested as a sequential handover in workflow than as genuine knowledge interaction.

The root cause of this functional misalignment does not lie in the insufficiency of either party's capability, but rather in the absence of a crucial "translation" link within the collaborative chain. The cultural proposals output by universities emphasize the rigor of academic expression, with relatively insufficient consideration given to the feasibility of production processes and cost structures; the product development led by enterprises tends to cater to the generic aesthetics of the mass market,

lacking systematic criteria for identifying and preserving cultural specificity. As a result, there is no commensurable semantic basis between the academic interpretation of universities and the product definition of enterprises, and the work outputs of each side are difficult to be effectively absorbed by the other's professional context. School-enterprise collaboration thus degenerates into a formal division of labor rather than a substantive co-creation relationship.

### ***2.3 Efficiency Loss in Knowledge Transfer during Collaborative Development and Its Causes***

The efficiency loss in knowledge transfer during school-enterprise collaborative development is concentrated in three interfaces. At the linguistic interface, there is no commensurable semantic basis between the cultural value interpretation in the academic discourse system and the product specification description in the industrial discourse system—universities operate with cultural semantic analysis and meaning construction as their working language, while enterprises operate with material parameters, structural design, and process planning as their operational language. The two sides have a systematic deviation in their understanding of the core question, "What constitutes a valuable cultural element," at the conceptual level. At the temporal interface, the university research cycle pursues thoroughness and depth, whereas the enterprise product iteration rhythm demands agility and rapid response, and the temporal logics of the two are difficult to directly couple. At the evaluative interface, universities use the accuracy of academic output and cultural value interpretation as their measurement standard, while enterprises use market share and return on investment as their assessment basis. The divergence in evaluation systems directly affects the prioritization of decision-making in the collaborative process<sup>[4]</sup>.

These three types of losses do not exist in isolation, but rather form a mutually reinforcing cyclical relationship. The misunderstanding at the linguistic interface amplifies the coordination costs at the temporal interface, while the misalignment of temporal logic further renders the standard differences at the evaluative interface more difficult to bridge. Ultimately, this manifests as a state of "parallel isolation under the guise of collaboration"—cooperation agreements are signed and division of labor is clear, yet cross-boundary knowledge integration with genuine innovative significance has not taken place. The intangible cultural heritage resources in the Dahei River-Qiandao Lake area are distinctly place-bound in nature, with their cultural codes deeply embedded in specific natural and social spaces. This embeddedness demands that the development subjects possess a profound understanding of the local cultural context. However, the efficiency loss in knowledge transfer within the current development model precisely undermines the possibility of effectively transferring such understanding from universities to enterprises, thereby constituting a structural obstacle to the in-depth advancement of collaborative development.

## **3. Collaborative Path Design for the Development of ICH Creative Products in the Dahei River-Qiandao Lake Area**

### ***3.1 Reconstruction of the Scope of Rights and Responsibilities of Collaborative Subjects Based on Capability Complementarity***

The effectiveness of school-enterprise collaborative development first depends on the clear delineation of the scope of rights and responsibilities. Traditional cooperation tends to divide rights and responsibilities based on the proportion of resource input, but this division overlooks the differentiated demands of different development links for different types of capabilities. The scope of rights and responsibilities should be reallocated according to the dual structure of "link dominance-link participation." In the cultural value interpretation link, universities possess cognitive authority and should, in a dominant role, establish an interpretive framework for ICH resources, specifying which symbols in the ICH items of the Dahei River-Qiandao Lake area can be extracted, which techniques can be programmed, and which cognitive schemas can serve as the core of meaning; enterprises, in a participatory role, provide feedback on the cultural receptivity of market audiences, so as to avoid excessive deviation between academic interpretation and consumer cognition<sup>[5]</sup>.

In the product engineering transformation link, enterprises possess manufacturing authority and should, in a dominant role, complete material selection, structural design, and process planning, translating the hollow-cut formal language of paper-cutting into product parameters suitable for mass production, and adapting the cloud patterns and relief techniques of leather carving to the production standards of different carriers; universities, in a participatory role, ensure that the integrity of the core

cultural elements is not compromised during the transformation process. The key to this allocation of rights and responsibilities lies in acknowledging that the authoritative positions of the two parties alternate across different links in the development chain, rather than being fixed. The essence of collaboration resides precisely in maintaining information symmetry during this circulation and handover of authority. The dominant party in each link bears decision-making responsibility, while the participating party bears review and feedback responsibility. Standardized interface documentation and stage-gate review mechanisms should be established for information transmission between the two parties.

### ***3.2 Product-oriented Translation of ICH Cultural Genes and Value-Added Mechanism***

After the reconstruction of rights and responsibilities, the core issue to be addressed is how to effectively translate cultural genes. The "translation" here is distinguished from symbol appropriation or element grafting; rather, it refers to extracting the cultural grammar implicit in ICH resources and converting it into parametric rules usable for product design. The ICH items in the Dahei River-Qiandao Lake area each possess their own independent visual grammatical systems-the hollow-cut forms and auspicious patterns of paper-cutting follow specific folk semantic logic; the cloud patterns and relief techniques of leather carving embody symmetrical decorative principles and directional symbolism; the piecing, sewing, and embroidery patterns of fabric art incorporate both functional and aesthetic considerations. Translating these deep-level rules into constraints and generative bases for product design, rather than simply printing the patterns onto generic carriers, constitutes the core task of the translation work<sup>[6]</sup>.

The specific implementation of this translation process requires establishing a three-stage workflow of "rule extraction-rule encoding-rule application." Universities, at the front end, complete the analysis of cultural semantics, converting implicit knowledge such as proportional relationships in patterns, color matching principles, and structural load-bearing logic into describable rule texts. The joint university-enterprise team, at the middle stage, encodes the rule texts into design parameters, that is, establishing the mapping relationship between cultural rules and product specifications. Enterprises, at the back end, complete prototype production and production verification based on the parameters. Taking paper-cutting as an example, the symmetry axes and repeating units of its hollow-cut forms can be extracted as arrangement algorithms for fabric patterns; taking leather carving as an example, the color system of its cloud patterns can be encoded as constraints for product color schemes. This translation approach differs from traditional decal-style application, as it enables the cultural genes to be truly embedded in the formal language of the products, thereby achieving deep expression of cultural value without sacrificing mass-production efficiency. The source of value-added lies precisely in this-the translated products are not containers carrying cultural symbols, but rather the formal presentation of the cultural grammar itself.

### ***3.3 Construction of Intellectual Property Allocation and Benefit-Sharing Mechanisms in Collaborative Development***

The sustainable operation of the development path ultimately depends on the institutional design of intellectual property allocation and benefit sharing. The intellectual property composition of intangible cultural heritage creative products is characterized by composite features, involving not only the design contributions of university participants and the technological improvements invested by enterprises, but also the traditional knowledge rights of the indigenous communities from which the intangible cultural heritage originates. Within the school-enterprise collaboration framework, it is necessary to establish a dual rights confirmation mechanism that distinguishes between "core cultural elements" and "derivative product designs." Core cultural elements, due to their collective and inherited nature, should not be claimed as exclusive rights by any single entity; rather, they should be managed within a public cultural resource pool, and any development activities based on core elements must comply with pre-established usage guidelines. Derivative product designs, which embody the creative input of both universities and enterprises in the translation process, may have their rights and interests allocated between the two parties according to their respective contribution ratios.

At the level of benefit sharing, a tiered revenue distribution model corresponding to the dual rights confirmation should be established. For product lines directly developed based on core cultural elements, a certain proportion of their revenue shall be allocated to the rolling accumulation of the regional intangible cultural heritage protection fund, ensuring that the reproduction of cultural resources can continuously obtain financial support. For iterative products developed based on

derivative product designs, their revenue shall be distributed between the school and enterprise entities according to a pre-set ratio, and the distribution ratio shall be linked to the actual contributions of both parties in the translation process. Taking the productization of fabric art ICH as an example, its piecing and sewing techniques and traditional patterns fall within the category of core cultural elements, while size scaling, fabric substitution, and functional expansion carried out for modern home scenarios fall within the category of derivative product designs. The two types of outcomes are subject to different rights rules and revenue flows. The design intention of this mechanism is to reconcile the public-oriented demands of intangible cultural heritage protection with the incentive requirements of commercial development within the same institutional framework, so as to avoid the erosion of the internal impetus for collaborative innovation due to ambiguous rights allocation, and also to provide a predictable institutional environment for the participation of more entities in future development.

## Conclusion

Grounded in the theoretical logic of school-enterprise collaboration, this study inventories regional ICH resources and analyzes cultural value layers to reveal structural causes of functional misalignment and knowledge-transfer efficiency loss in the current development model. It proposes three pathways: capability-complementarity-based rights-responsibility reconstruction, parametric cultural-gene translation, and layered benefit-sharing under dual rights confirmation. The core value of collaboration lies in providing an institutional interface for cross-contextual cultural value transmission. The key challenge is insufficient precision in reconstructing the encoding-decoding relationship between traditional knowledge and modern industrial logic; its effectiveness hinges on complete docking mechanisms at linguistic, temporal, and evaluative interfaces. Effective collaboration requires an institutionalized knowledge-transfer pathway to ensure cultural understanding migrates from universities to enterprises. Future research may examine the framework's explanatory power and applicability across development stages and product types, and explore indigenous communities' roles and rights protection.

## Fund Projects

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