

Cross-Media Narrative Methods and New Product Design of Taizhou Embroidery from the Perspective of Living Heritage

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Abstract. From the perspective of living heritage, this paper explores innovative digital design methods for intangible cultural heritage (ICH) to promote the sustainable development of Taizhou embroidery in modern society and provide new approaches and methods for the transmission and dissemination of ICH. Based on transmedia narrative theory and through literature review and case studies, the study proposes three principles of transmedia narrative for Taizhou embroidery—story world, media convergence, and user interaction. It extracts keywords for cultural and creative design, and constructs a cross-media narrative strategy for Taizhou embroidery from three dimensions: cultural tracing, innovative integration, and audience experience. The study then integrates these strategies into AIGC-generated design solutions to explore new development models for Taizhou embroidery. The integration of transmedia narrative theory and digital cultural and creative design of Taizhou embroidery enhances public engagement and cultural identity, promoting innovative transformation and sustainable development of ICH.

Keywords: Taizhou embroidery; transmedia narrative; living heritage; digital communication.

1. Introduction

Intangible cultural heritage (hereinafter referred to as "ICH") is the collective memory of human reproduction and progress. It is not only an important witness to historical development but also an irreplaceable cultural resource and a unique embodiment of world cultural diversity and the multiplicity of civilizations. The living transmission of ICH is closely linked to digital technologies; the development of new media digital technologies such as virtual reality and artificial intelligence has brought new opportunities for the inheritance of ICH. As one of the intangible cultural heritages of Zhejiang Province, Taizhou embroidery is known as the "Oriental Treasure" and carries the unique regional culture of the eastern coastal area of China. However, in the context of the digital era, Taizhou embroidery faces challenges such as interrupted transmission across generations, a single mode of dissemination, and insufficient innovation in application. How to achieve the living transmission of Taizhou embroidery under the current historical context is an urgent issue that needs to be addressed. In response to the current situation and environment faced by Taizhou embroidery[1], this paper will explore the topic based on the craft characteristics and transmission status of Taixiu.

2. Characteristics and Inheritance Status of Taizhou Embroidery

2.1 Technical Characteristics of Taizhou Embroidery

Taizhou embroidery (hereinafter referred to as "Taixiu") originated from folk practices in the Taizhou region. It incorporates Western embroidery techniques, which were integrated by local embroiderers with traditional Taixiu methods, forming a unique style distinct from other embroidery forms. The historical development of Taixiu reflects the cultural exchanges between Taizhou, a coastal region in eastern China, and Western cultures, making it a vital carrier of local customs and regional identity.

The cultural value of Taixiu is rooted in the region's long-standing history and skilled craftsmanship. Over time, it has developed representative techniques such as "engraving embroidery," "drawn thread work," and "grape gloss embroidery." Beyond its artistic appeal, Taixiu plays an important role in social life. Originally used in church interiors and household decor, it also features in bridal wear and ceremonial garments. For example, inheritor Liao Chunmei's piece The

Harmonious Immortals uses vivid imagery and auspicious patterns to express cultural values and spiritual hopes. In recent years, inheritors have promoted Taixiu through cultural experiences, tourism, and new media, showcasing Taizhou's cultural charm to a broader audience.

2.2 Inheritance Status of Taizhou Embroidery

Compared to a decade ago, the transmission of Taixiu has made notable progress. National policies such as the Revitalization Plan for Traditional Chinese Crafts emphasize the importance of preserving ICH like Taizhou embroidery. Local governments have integrated ICH, art, tourism, and commerce through models such as "ICH + Tourism," which significantly enhanced public visibility. However, despite these efforts, challenges remain.

Talent cultivation through school-enterprise partnerships has improved, but the shortage of skilled embroiderers persists due to aging practitioners and gaps in skill transmission. Digitally, a lack of consumer-focused platforms hampers dissemination. Although Taixiu has won prestigious awards such as the "Shanhua Award" and has collaborated with urban brands, animation IPs, and other cultural sectors, its influence remains geographically constrained. In summary, while Taixiu's inheritance has improved, efficiency and long-term competitiveness still need enhancement.

3. Design Methods for Cross-Media Narratives of Taixiu

3.1 The Inevitable Trend of Cross-Media Narratives for Intangible Cultural Heritage

The theory of transmedia narrative was first introduced by Henry Jenkins in 2003 and is considered a key development in post-classical narratology. With the rise of digital media, this theory integrates multiple disciplines and media forms to enable multi-dimensional storytelling, moving beyond the limitations of single-medium narratives. For ICH, transmedia narratives offer new research perspectives and expand possibilities for media-based storytelling[2].

As Marie-Laure Ryan noted in *Transmedia Storytelling*, "Each technological innovation releases new narrative energy and opens up new possibilities[3]." For ICH, transmedia narratives must deeply explore historical and cultural contexts to construct immersive and interactive story worlds. By integrating virtual and physical media, these narratives enhance authenticity and engagement, turning passive audiences into active co-creators of stories. This two-way interaction forms the foundation of living heritage and is essential for sustainable transmission.

Therefore, this paper constructs a cross-media narrative strategy for Taizhou embroidery from three dimensions: story world, media convergence, and audience interaction (see Fig.1). First, with "continuity" as the core, the narration of intangible cultural heritage (ICH) stories should be emphasized. Given the rich forms and complex content of Taizhou embroidery, it is essential to systematically organize its narrative texts through digitalization, deeply tracing the cultural

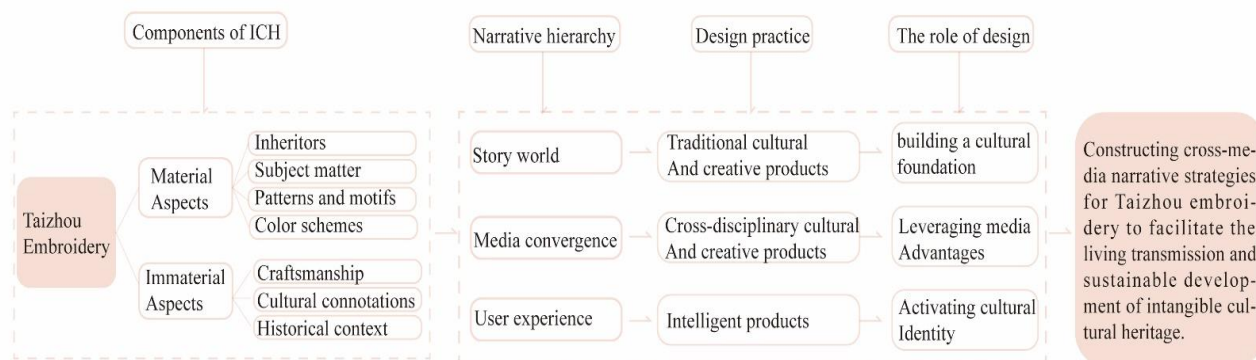


Fig. 1 Taizhou embroidery cross-media narrative design strategy

connotations of the heritage to lay a solid foundation for media dissemination. The core of media convergence is "expandability." In the era of social media, communication efficiency is crucial.

Different media channels leverage their respective strengths, and through integrated dissemination, they attract greater audience engagement. "Performative engagement" is key to audience interaction. By incorporating the latest media technologies, immersive narrative spaces and interactive platforms can be provided for audiences, inspiring their creativity and collaboratively promoting the dynamic transmission of intangible cultural heritage.

3.2 Principles of Cross-Media Narrative for Taixiu

3.2.1 Cultural Tracing and Heritage Continuity

Currently, visitor numbers at the Taizhou Embroidery Museum have dropped by 30% compared to when it first opened. This stagnation indicates a limited cultural reach. Thus, cross-media narrative design for Taixiu must be built upon a solid narrative context, incorporating both material and immaterial cultural elements (see Fig.2). Modern audiences seek experiential and lifestyle-integrated heritage culture, not just traditional narratives.

In the material dimension, cultural symbols such as inheritors, techniques, color patterns, etc., should be distilled and expressed via multimedia to enhance cultural depth. The narrative language must match the cognitive and cultural background of the target audience—clear and relatable while avoiding cultural oversimplification or misappropriation.

In the immaterial dimension, historical accuracy is vital. Field research and documentation help restore Taixiu's development narrative. Amid fragmented information, avoiding excessive entertainment or commercialization is essential to preserve a coherent and respectful cultural context[4].

creators	works	thematic content	embroidery techniques	color palette	spiritual essence
folk embroiderers		phoenix peony	flat stitch	 C:89 M: 72 Y:33 K:1  C:19 M: 6 Y:6 K:0	auspiciousness and fulfillment harmony and completeness
folk embroiderers		lotus butterfly	flat stitch	 C:89 M: 72 Y:33 K:1  C:13 M: 63 Y:13 K:0	healthy growth happiness and joy
Ying Dayu		floral motifs	relief flat embroidery	 C:9 M: 11 Y:10 K:0  C:31 M: 31 Y:31K:0	spirit of innovation aesthetic sensibility
Chen Ke		floral motifs scrolling grass patterns	relief flat embroidery	 C:14 M: 19 Y:67 K:0  C:14 M: 49 Y:38K:0	cultural inheritance prosperity and flourishing
Chen Ke		Han dynasty horse famous Chinese landmarks	relief embroidery grape embroidery	 C:2 M: 1 Y:4 K:0  C:9 M: 11 Y:10 K:0	spirit of innovation self-improvement
Miao Chunmei		peony butterfly	flat stitch relief embroidery painted embroidery	 C:45 M: 15 Y:13 K:0  C:9 M: 11 Y:10 K:0	beauty and happiness nobility and beauty
Miao Chunmei		cicada geometric patterns	flat stitch blended stitch covering stitch	 C:50 M: 49 Y:56 K:0  C:9 M: 11 Y:10 K:0	natural harmony peace and stability
Lin Xia		abstract motifs	fine art embroidery	 C:9 M: 11 Y:10 K:0  C:50 M: 49 Y:56 K:0	vitality and dynamism simplicity and Zen spirit
Lin Xia		mulberry leaves mulberries abstract motifs	seed stitch mesh embroidery meridian embroidery	 C:42 M: 100 Y:100 K:9  C:69 M: 96 Y:96 K:68	vibrant life force resilience and perseverance

Fig. 2 Atlas of intangible cultural heritage Taiwan embroidery design elements

3.2.2 Innovative Integration and Diverse Development

In the cross-media narrative of Taixiu, emphasis should be placed on the innovative integration of media and the advantages each medium brings. As Guo Xi of the Northern Song dynasty said in his *Linquan Gaozhi*, "Poetry is a shapeless painting; painting is a poetic form with shape," suggesting that media fusion is an ancient yet enduring idea.

Transmedia narratives must maintain extensibility—media serve as extensions of the story world and must preserve cultural accuracy. Traditional media like print are authoritative but limited in interactivity, while digital media offer immediacy but risk fragmented and less reliable information. By combining the strengths of various media—traditional for authenticity, digital for engagement—Taixiu's narrative can reach broader audiences and improve communication efficiency.

3.2.3 Audience Experience and Cultural Identity

Current cross-media narrative practices for Taixiu still show shortcomings. Despite increasing product releases, user experience and smart interactivity remain underdeveloped. Multi-platform narratives offer immersive experiences. Young consumers, the main market for ICH, seek personalized and emotionally resonant experiences.

Therefore, Taixiu narratives must include cross-sector products and multi-sensory experiences. By integrating ICH into modern life, narratives become interactive and relatable, evoking emotional resonance. This transforms passive readers into active narrators, dismantling traditional, linear storytelling, and encouraging dynamic, multi-threaded transmission of culture.

4. Logic and Practice of Cross-Media Narrative Design for Taixiu

AI-generated content (AIGC) has become a major innovation in recent years. It enhances creative collaboration, efficiency, and quality in design[5]. This study uses Taixiu as a case, drawing three design directions from transmedia theory and applying AIGC tools (e.g., ComfyUI) to generate cultural and creative designs. The process involved using "Tai embroidery products" as a core text prompt, refining it with design keywords from previous analysis, and then using samplers to enhance image detail and quality. A total of 30 concept images were produced (see Fig.3).

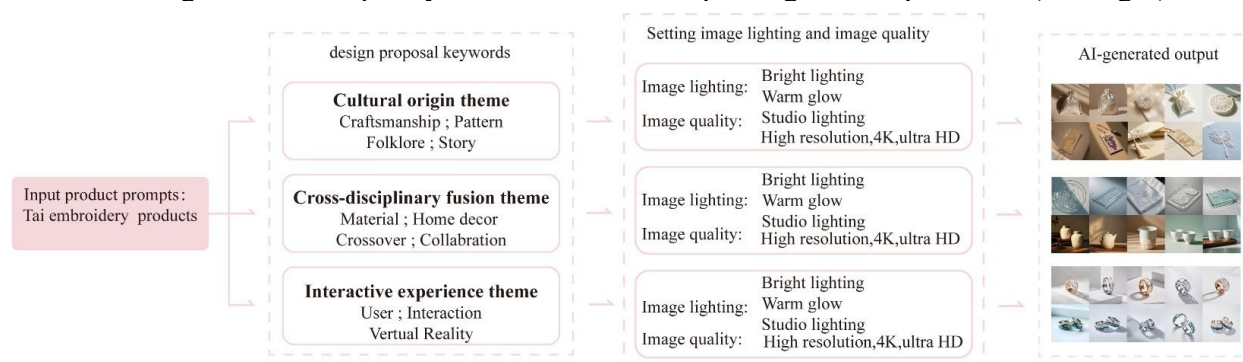


Fig. 3 AI-Generated Solutions for Taizhou Embroidery Cultural and Creative Design

4.1 Living Heritage and Strengthening Cultural Roots

Effective communication is key to broader participation in heritage transmission. Cultural and creative products meet consumers' personalization needs and offer new paths for living heritage[6]. In Taizhou folklore, sachets and bookmarks symbolize blessings and are ideal carriers for Taixiu's patterns and techniques. By incorporating traditional motifs like "fish," "grape," and "flowers" and applying core techniques like "engraving embroidery" and "flat stitch embroidery" to these products, the cultural essence of Taixiu is preserved and extended to new markets (see Fig.4). The motif of "double fish" conveys people's aspirations for a good life, while "grapes," characterized by their abundant clusters and numerous seeds, symbolize prosperity, a flourishing lineage, and bountiful harvests. "Flat stitch embroidery" is a classic and commonly used technique in Taizhou embroidery, distinguished by uniform stitch lengths and a smooth, delicate surface. "Relief embroidery," on the other hand, is an innovative technique developed by modern inheritors, creating a light and three-dimensional layered effect[7]. Therefore, by incorporating representative patterns and

techniques of Taizhou embroidery into cultural and creative design, consumers can more intuitively experience the cultural narratives embedded within this intangible heritage.



Fig. 4 Design Renderings of Taizhou Embroidery Cultural and Creative Products with a Cultural Root-Tracing Theme (AI-Assisted)

4.2 Creative Transformation and Expanding Cultural Boundaries

The integration of diverse media forms creates a multi-dimensional media ecosystem, building an "expansive" story world. Cross-sector collaboration—through partnerships between cultural products and commercial brands—enables mutual reinforcement of communication and resource sharing. For Taixiu, such cross-sector linkage involves integrating with popular industries.

Taizhou is one of the birthplaces of Zhejiang celadon and glass carving crafts. Hence, crystal tableware and celadon ceramics possess high market value. By extracting representative Taixiu patterns like “lotus leaf,” “double fish,” and “ocean waves,” along with techniques such as "flat stitch" and "engraving embroidery[8]," and embedding them in crystal plate layers or pairing them with celadon teaware, the result is a striking visual contrast between heaviness and lightness, hardness and softness (see Fig.5).

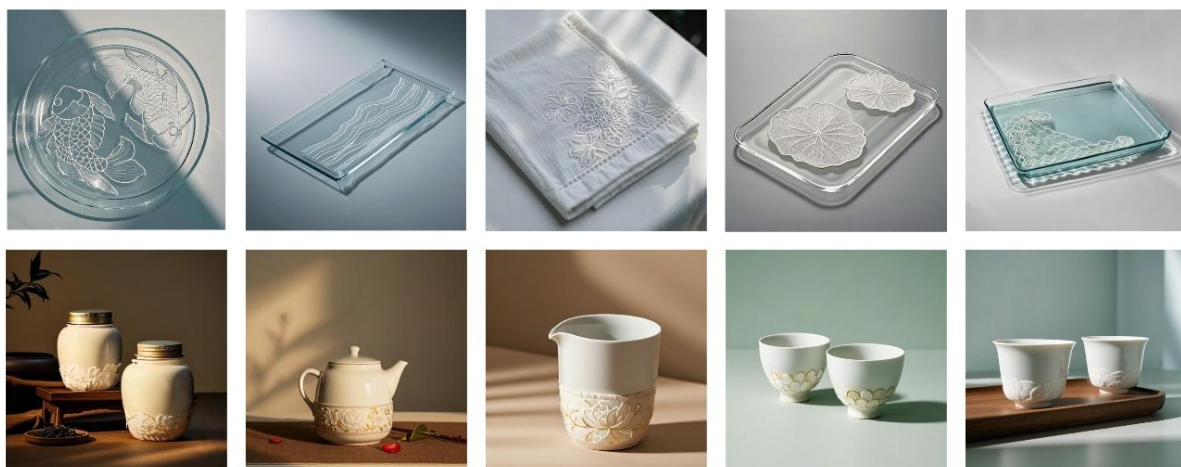


Fig. 5 Design Renderings of Taizhou Embroidery Cultural and Creative Products with a Cross-Disciplinary Integration Theme (AI-Assisted)

Moreover, creative marketing strategies under the “ICH+” model (e.g., “ICH + tourism,” “ICH + branding”) offer innovative channels for cultural heritage transmission. These modes are tailored to audience preferences and explore industries that can align with Taixiu’s cultural identity,

introducing the craft into younger consumer markets. This builds a friendly communication bridge between Taixiu and the general public, helping it break cultural boundaries, expand influence, and enhance commercial vitality for sustainable development.

4.3 Innovative Applications and Enhanced Communication Effectiveness

As collective social memory, intangible cultural heritage thrives on public participation. Smart jewelry—emerging from the fusion of technology and fashion—has evolved beyond mere decoration, expanding its application scenarios and product value[9].

In heritage narratives, smart jewelry can combine traditional craftsmanship with modern technology. For instance, Taixiu patterns like "peony" and "mountains and seas" (symbols of prosperity and harmony between humans and nature) can be embedded into the design of smart rings. These can feature the "flat stitch" and "engraving embroidery" techniques to ensure narrative consistency and cultural extension (see Fig.6).

Furthermore, Taixiu cultural products should better integrate narrative media resources. With digital interaction technologies such as VR and MR, public experience can be significantly enhanced. For example, in museums and cultural venues, NFC touchpoints can be set up where users interact via smart rings to trigger immersive VR experiences and access a broader spectrum of heritage content. Through VR[10], users can transcend time and space constraints, deepening cognitive, emotional, and mnemonic recognition of Taixiu. Images, techniques, text, and sound become storytelling carriers, integrated into multi-sensory interaction models, crafting an innovative communication framework that achieves immersive and multi-dimensional heritage experiences.

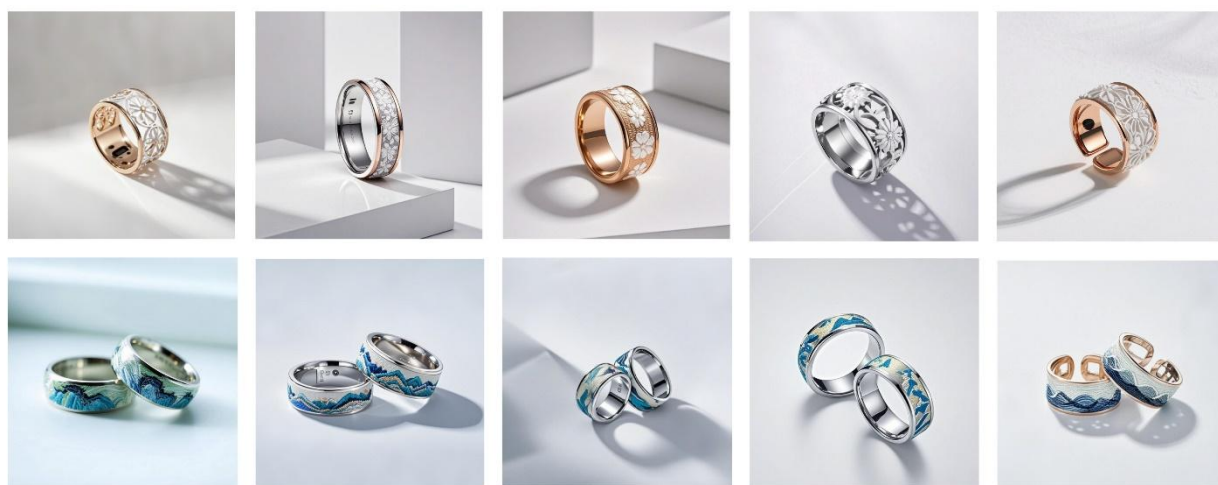


Fig. 6 Design Renderings of Taizhou Embroidery Cultural and Creative Products with an Interactive Experience Theme (AI-Assisted)

5. Summary

This paper studies the living transmission strategies of the intangible cultural heritage (ICH) of Taizhou embroidery (Taixiu) based on cross-media narrative theory. Taking the narrative design methods of Taixiu as the entry point, it proposes relevant design strategies to guide design practice. The main research findings show that: the digitalization of cultural and creative products constructs ICH narratives, showcases the artistic charm of Taixiu, and presents the cultural connotations of intangible heritage in a multidimensional way; integrating cross-media narrative theory into design practice helps to create immersive cultural experiences, meet users' diverse needs, establish emotional connections with ICH, and enhance users' sense of cultural identity and belonging; AIGC technology can not only provide designers with creative ideas but also enhance resource exchange and sharing, thereby activating cultural interactions between consumers and intangible heritage.

Due to the limited range of Taixiu design elements extracted in this study, the research has not been able to fully cover the cultural richness of Taixiu. Future research should systematically integrate intangible heritage data to enhance the breadth and depth of ICH research, providing more diverse practical pathways for the living transmission and innovative development of intangible cultural heritage.

Acknowledgements

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