Trends in Social Sciences and Humanities Research
Print ISSN: 2959-992X
Online ISSN: 2959-9938
DOI: https://doi.org/10.61784/tsshr3202

BRIDGING THE DIGITAL-CULTURAL DIVIDE: DIGITAL LITERACY AND COMMUNICATIVE EMPOWERMENT OF ICH INHERITORS IN CHINA

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Abstract: This study investigates the digital literacy crisis facing Intangible Cultural Heritage (ICH) inheritors in China, a group pivotal for cultural sustainability yet increasingly marginalized in the digital public sphere. Focusing on marriage custom inheritors in Zhejiang Province, we develop and validate a "Culture-Communication" oriented tripartite model of digital literacy—comprising survival, production, and communication competencies. Employing a mixed-methods approach (N=317 survey; n=15 interviews), the research reveals severe structural imbalances in digital competencies, marked by a critical deficit in content production skills. Significant geographic and generational "mirror fractures" are identified, where technical proficiency and cultural authority are inversely distributed across age groups. A Structural Equation Model confirms digital production competency as the primary driver of perceived communication efficacy (Total β=0.78). The findings diagnose a triple rupture chain—subjective, technical, and institutional—constraining effective digital dissemination. In response, the study proposes an integrated "Three-Path Synergy & Five-Dimensional Empowerment" framework. This model advocates for systemic interventions at individual, organizational, and policy levels to enhance literacy, coupled with strategic empowerment in content, IP, platforms, community, and ecosystem development. The framework aims to facilitate inheritors' subjectivity reconstruction from passive cultural holders to proactive digital communicators, offering a actionable pathway for ICH's adaptive evolution within national cultural digitalization strategies.
Keywords: Intangible cultural heritage; Digital literacy; Cultural communication; Digital divide; Mediatization; China; Zhejiang

1 INTRODUCTION

The integration of China's national cultural digitalization strategy with intangible cultural heritage (ICH) protection mandates a critical paradigm shift: from on-site, embodied transmission to digital dissemination. This transition places ICH inheritors—the core human repository of living traditions—at a complex crossroads. While digital platforms offer unprecedented reach, they also risk rendering inheritors, particularly an aging cohort, as "culturally mute" in the new media landscape [1-2]. A paradoxical "subjectivity crisis" emerges: elder inheritors face significant digital access and usage barriers, while some younger, tech-savvy practitioners may prioritize technical form over cultural substance, leading to the erosion of authentic meaning. Consequently, ICH is often passively "displayed" rather than actively communicated by its rightful bearers.

Zhejiang Province, a nexus of advanced digital economies and rich ICH resources, presents a salient context. Its visually expressive marriage customs (e.g., Ninghai's "Ten-Mile Red Dowry") are potent candidates for digital storytelling. Yet, preliminary data shows over 68% of relevant inheritors are above 60, with digital competence strongly negatively correlated with age. This tension between technological environment and inheritor capacity frames our core research problem: How can ICH inheritors reconstruct their subjectivity as empowered digital communicators?

This study seeks to address four specific questions:

RQ1: How can a culturally-sensitive, communication-oriented model assess the digital literacy of ICH inheritors?

RQ2: What is the current state and structural characteristics of their digital literacy?

RQ3: How does this literacy impact ICH communication efficacy?

RQ4: What empowerment strategies can enhance their digital agency?

2 LITERATURE REVIEW & THEORETICAL FRAMEWORK

2.1 Digital Literacy in the ICH Context

Digital literacy has evolved from basic technical skills to encompass critical consumption and creative production within digital societies. Foundational frameworks like the EU's DigComp provide a universal baseline [3]. However, for ICH inheritors, digital practice is inherently domain-specific. Their literacy is not about general office software proficiency but about leveraging 3D scanning for artifact preservation, crafting narrative videos for ritual explanation, and utilizing platform algorithms for cultural outreach. Thus, we conceptualize ICH inheritors' digital literacy as a specialized form of literacy for cultural communication [4-5].

2.2 Theoretical Anchors

- Uses and Gratifications (U&G): This theory positions inheritors as active users seeking to fulfill needs like cultural documentation, skill transmission, and value affirmation through media[6]. Digital literacy determines their capacity to utilize tools effectively to meet these needs.
- Digital Divide: The divide extends beyond basic access to encompass a "second-level" gap in usage skills and a "third-level" gap in outcome benefits. In ICH, this manifests as intergenerational fractures in both digital competency and the authority of cultural interpretation[7].
- Mediatization: Digital media are not neutral channels but active agents that reshape social and cultural practices[1-2]. The process of ICH transmission itself is becoming mediatized, making inheritors' ability to navigate and steer this process crucial.

2.3 A Tripartite "Culture-Communication" Model

Synthesizing these lenses[3-4, 6-7], we propose a three-dimensional model (Figure 1):
- Dimension 1: Digital Survival Competency (The Access Layer). Foundational skills for operating devices and retrieving online ICH information.
- Dimension 2: Digital Production Competency (The Core Layer). The capacity for creative digital content creation, including recording, modeling, and narrating ICH elements.
- Dimension 3: Digital Communication Competency (The Diffusion Layer). Strategic skills for content distribution, community engagement, and value realization on digital platforms.

This model prioritizes the integration of technical skill with cultural intentionality and communicative strategy, centering the inheritor's agency.

3 METHODOLOGY

A convergent parallel mixed-methods design was employed.
Quantitative Strand: A survey was administered to 317 marriage custom ICH inheritors across Zhejiang, sampled via stratified and snowball methods. The instrument included a 62-item Digital Literacy Scale (α=0.89), a Perceived Communication Efficacy Scale, and demographic questions. Data analysis utilized SPSS 26.0 for descriptive/inferential stats and AMOS 26.0 for Structural Equation Modeling (SEM).
Qualitative Strand: 15 semi-structured interviews were conducted with inheritors selected for maximum variation in age, location, and ICH type. Transcripts were analyzed thematically to provide depth and context to statistical patterns.

4 FINDINGS

4.1 Structural Imbalance in Digital Literacy

Survey data revealed a moderate overall level but severe inter-dimensional imbalance (Table 1).

Table 1 Digital Literacy Scores (N=317, Max=100)

Competency Dimension	Mean (M)	SD	Assessment
Digital Survival Competency	48.2	12.5	Medium-Low
Digital Production Competency	29.7	10.8	Critically Weak
Digital Communication Competency	35.4	11.6	Low-Medium

Only 13% reported basic 3D modeling skills, and under 10% could independently produce coherent ICH short videos, indicating a widespread failure to transition from digital consumers to cultural producers.

4.2 Pronounced Geographic and Generational Divides

A "core-periphery" gradient was evident, with scores in Hangzhou/Ningbo significantly higher than in mountainous regions. GWR analysis identified digital infrastructure density (β=0.63, $p<0.01$) as the strongest spatial predictor.
More critically, a "mirrored fracture" was observed between generations (Table 2). While inheritors under 35 significantly outperformed those over 60 in digital operational skills, the reverse was true for deep cultural knowledge.

Table 2 Intergenerational "Mirrored Fracture" (Sample Indicators)

Indicator	<35 Group	>60 Group	t-value	p-value
Device Operation Proficiency	82.5 ± 6.3	35.7 ± 8.9	8.72	<.01
Mastery of Ritual Procedures	34.7 ± 7.2	81.5 ± 9.3	-7.31	<.01

Indicator	<35 Group	>60 Group	t-value	p-value
Interview data illuminated this divide: an elder inheritor expressed anxiety about "pressing the wrong button," while a younger inheritor acknowledged misusing a traditional symbol in a digital design due to shallow cultural understanding.				

4.3 Digital Literacy as a Driver of Communication Efficacy

The SEM model demonstrated excellent fit (χ^2/df=1.89, RMSEA=0.06, CFI=0.95). Digital literacy had a strong total effect on perceived communication efficacy (path coefficient=0.78, p<.001). Crucially, Digital Production Competency was the strongest direct driver (β=0.45), followed by Communication (β=0.28) and Survival (β=0.22) competencies. This confirms that content creation ability is central to effective digital communication.

4.4 The Triple Rupture Chain

Analysis identified three interlinked structural barriers:

- Subjective Rupture: Internal fragmentation among inheritors based on age and tech acceptance.
- Technical Rupture: A mismatch between generic digital tools and the nuanced, embodied, symbolic nature of ICH expression.
- Institutional Rupture: Disjointed policies offering superficial, non-systematic digital training with few tangible incentives for digital practice.

5 DISCUSSION: AN INTEGRATED EMPOWERMENT FRAMEWORK

To address the systemic ruptures, we propose an integrated "Three-Path Synergy & Five-Dimensional Empowerment" model (Figure 2).

5.1 The "Three-Path Synergy" for Literacy Enhancement

- Individual Path: "Silver-Youth" Digital Pairing. Formalized mentoring that pairs elder inheritors (cultural depth) with youth (digital skills) for bidirectional learning, supported by a "digital inheritance credit" system.
- Organizational Path: Tiered Digital Workshop Network. Establishing provincial-to-county workshops offering graduated access to technology and tailored, progressive training modules.
- Institutional Path: Digital Literacy Credit Bank. Institutionalizing digital competency by integrating it into the official inheritor assessment and funding system via a lifelong learning credit mechanism.

5.2. The "Five-Dimensional Empowerment" for Communication

Literacy must be channeled into effective practice through:

- Content Production: Building structured, metadata-rich "digital cultural gene banks" to provide accurate, remixable foundational assets.
- IP&Narrative: Developing unified regional cultural IPs (e.g., "Zhejiang Weddings") for coordinated transmedia storytelling.
- Platform&Scenario: Creating immersive, blended physical-digital experiences (e.g., AR heritage trails, MR museum installations).
- Community&Interaction: Fostering co-creative online communities to transform audiences from viewers to participants.
- Ecosystem Synergy: Forming cross-sector alliances (government, tech, media, academia) to pool resources and incubate innovative projects.

This integrated model aims to create a virtuous cycle where enhanced literacy enables effective communication, the rewards of which further motivate learning and innovation.

6 CONCLUSION

This study establishes that the digital literacy of ICH inheritors is a specialized, multidimensional construct critical for their communicative agency[4-5, 8-9]. The empirical diagnosis reveals not just a deficit but a structural crisis characterized by a critical lack of production skills and a reinforcing "mirrored fracture" between generations. The proven strong link between production competency and communication efficacy underscores the urgency of moving beyond basic digital access to fostering sophisticated content creation capabilities.

The proposed framework offers a holistic policy and intervention roadmap. It shifts the focus from perceiving inheritors as passive beneficiaries of digitization to actively empowering them as central authors and architects of their cultural heritage's digital future. This subjectivity reconstruction is essential for ensuring that ICH remains a dynamic, meaningful, and participant-driven force within the evolving digital society of China and beyond.

7 LIMITATIONS & FUTURE RESEARCH

Limitations include the regional scope and cross-sectional design. Future research should track literacy evolution longitudinally, integrate objective platform metrics, and explore the implications of generative AI on cultural production. Comparative international studies could further contextualize these findings within global debates on cultural rights and digital equity[10].

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

This research was supported by the Zhejiang Provincial Philosophy and Social Sciences Planning Project "Research on the Digital Literacy of ICH Practitioners in Zhejiang" (Grant No. 26NDJC055YBM) and the Zhejiang Provincial Department of Education General Scientific Research Project "Research on Enhancing the Digital Literacy of ICH Practitioners in Zhejiang: Theoretical Framework and Practical Pathways" (Grant No. Y202455764).

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