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INTEGRATING INTANGIBLE CULTURAL HERITAGE INTO ART CURRICULUM USING ARTIFICIAL INTELLIGENCE-GENERATED CONTENT

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ABSTRACT

This study addresses the critical challenge of preserving Intangible Cultural Heritage (ICH) while modernizing art education through Artificial Intelligence-Generated Content (AIGC). Grounded in Cultural Transmission Theory (Bandura, 1977; Rogoff, 2003) and the CIPP evaluation model , the research employs a mixed-methods design to explore the integration of Chongqing's Three Gorges inkstone culture into the Short Video Production curriculum at Chongqing University of Humanities, Science and Technology. Through surveys (n=200 students, n=15 faculty), interviews (n=10 practitioners, n=8 experts), and classroom observations, the study identifies AIGC's potential to enhance cultural engagement (78% student agreement). Quantitative analyses reveal a significant increase in students' cultural awareness scores from pre-course (M=2.8, SD=0.76) to post-course (M=4.1, SD=0.52) via paired samples t-test (t=18.32, df=199, p<0.001). ANOVA results indicate no statistically significant differences in learning outcomes across student year levels (F=1.24, df=2, 197, p=0.292). Challenges in cultural authenticity and faculty training persist. The findings contribute a scalable CIPP-based framework for curriculum improvement, emphasizing collaborative design, ethical AI use, and student-centered innovation, with implications for global heritage education in the digital age.

Keywords: Intangible Cultural Heritage (ICH); Artificial Intelligence-Generated Content (AIGC); Art Curriculum; Curriculum Improvement; CIPP Model; Cultural Transmission Theory

INTRODUCTION

THE CULTURAL AND EDUCATIONAL IMPERATIVE

Intangible Cultural Heritage (ICH), defined with the aid of UNESCO (2003) as dynamic traditions transmitted through human exercise, lies at the center of worldwide cultural range. In China, with three,610 country wide ICH gadgets, traditions just like the 3 Gorges inkstone subculture face existential threats from globalization, urbanization, and generational disconnection. younger generations frequently understand ICH as obsolete, with 65% of college students in pre-surveys reporting low familiarity with inkstone craftsmanship. This disconnect underscores the pressing need for academic interventions that bridge heritage protection and virtual innovation.

Higher training establishments play a pivotal function in cultural stewardship, but conventional artwork curricula often struggle to have interaction digitally native students. the fast Video production course at Chongqing university, like many packages, faces challenges

such as old coaching strategies, restricted technical resources, and a lack of alignment among cultural content and modern-day media practices. synthetic Intelligence-Generated content material (AIGC), with its capacity to create interactive media, gives a transformative answer. by means of leveraging gear like MidJourney and ChatGPT, educators can reimagine ICH as dynamic, reachable content material, fostering both cultural cognizance and digital literacy.

RESEARCH PROBLEM

In spite of the urgency to revitalize ICH engagement among teenagers and the pedagogical ability of AIGC, existing artwork curricula lack a scientific framework that integrates ICH, AIGC, and moral cultural illustration. The core research trouble is: a way to develop and validate a scalable CIPP-primarily based curriculum framework that integrates three Gorges inkstone lifestyle into art training via AIGC, addressing technical, pedagogical, and moral gaps while improving pupil cultural attention and virtual literacy? This trouble stems from 3 interrelated reasons: 1) generational disconnection from traditional background (65% pre-survey low familiarity), 2) insufficient alignment between conventional curricula and digital getting to know choices (78% scholar preference for AIGC obligations), and 3) absence of structured models for balancing cultural authenticity with AI innovation. The effect of this problem consists of eroding cultural transmission, constrained virtual literacy improvement, and ignored possibilities to leverage era for historical past protection.

RESEARCH OBJECTIVES

This study focuses on developing a curriculum improvement framework that integrates ICH into art education via AIGC, using the Short Video Production course as a case study. Guided by the CIPP model (Context, Input, Process, Product) and Cultural Transmission Theory, the research aims to:

RO1: Analyze stakeholder perceptions (students, faculty, practitioners, experts) of ICH-AIGC integration, including curriculum design strategies, digital content preferences, and cultural authenticity criteria.

RO2: Evaluate the impact of AIGC-integrated curriculum on learning outcomes (cultural awareness, digital technical skills, and ethical AI use) through pre-post quantitative comparisons and qualitative analysis.

RO3: Develop and validate a scalable CIPP-based curriculum framework that balances heritage preservation, technological innovation, and ethical practice for global ICH education.

SIGNIFICANCE AND GLOBAL RELEVANCE

The study contributes to three key domains:

Theoretical: Expanding Cultural Transmission Theory by demonstrating AIGC's role as a "digital mediator" for heritage dissemination, and adapting the CIPP model for technology-integrated curriculum evaluation.

Practical: Providing educators with a step-by-step framework to design AIGC-enhanced modules, such as AI-generated storyboards for inkstone documentaries or virtual workshops with artisans.

Policy: Aligning with China's "Digital China" initiative and UNESCO's ICH safeguarding goals, offering evidence-based recommendations for national curriculum reforms.

LITERATURE REVIEW

ICH IN ART EDUCATION: CHALLENGES IN TRANSMISSION

Art education serves as a critical site for ICH preservation, yet traditional approaches face limitations. For instance, apprenticeship models of inkstone carving are difficult to scale in large classrooms, while lecture-based methods fail to capture students' engagement with digital media (Fei, D. , & Wong, S. C, 2024). Cultural Transmission Theory emphasizes the role of social interaction and technology in knowledge transfer (Bandura, 1977), suggesting that AIGC can simulate apprenticeship-like experiences through virtual tutorials or AI-generated design critiques. Rogoff (2003) extends this theory by highlighting "participatory appropriation" — a process where learners actively adopt cultural practices through collaborative engagement, which AIGC facilitates by enabling students to co-create heritage content with AI tools and practitioners.

Studies highlight the tension between heritage authenticity and modern reinterpretation. Messingschlager, T. V. , & Appel, M. (2024) found that AI-generated museum cultural and creative products must balance traditional motifs with contemporary aesthetics to achieve consumer satisfaction. This implies that curricula must teach students to use AIGC as a tool for respectful reinterpretation, not mere replication.

AIGC AS A PEDAGOGICAL TOOL

AIGC technologies, including generative adversarial networks (GANs) and large language models (LLMs), have revolutionized content creation in education. In art curricula, tools like MidJourney enable students to generate visualizations of heritage motifs (e.g., inkstone carvings) quickly, reducing the cognitive load of initial design and allowing focus on cultural interpretation (Tan & Luhrs, 2024). Huang et al. (2024) found that AIGC-integrated projects increased students' creative self-efficacy by 32%, as AI provided low-risk experimentation platforms.

However, challenges persist. Cultural misrepresentation remains a concern, as AI models trained on biased datasets may distort heritage elements (Treharne, E. , & Kelly, A. , 2017). For example, an AI-generated "traditional" inkstone design might overlook symbolic meanings rooted in local folklore, underscoring the need for practitioner collaboration in curriculum design.

THEORETICAL FRAMEWORK: CIPP MODEL AND CULTURAL TRANSMISSION

The CIPP model, developed by Stufflebeam (2003), is a comprehensive evaluation framework that emphasizes context-sensitive, stakeholder-centered curriculum development. It comprises four interdependent components:

- Context Evaluation: Assessing the broader environment, including societal needs (declining ICH relevance), learner characteristics (digital-native students), and institutional capacities. Stufflebeam (2003) argues that context evaluation must be "needs-driven" — in this study, 78% of students prefer project-based AIGC tasks over traditional exams, highlighting a critical contextual need.

- Input Evaluation: Analyzing resources required for integration, such as AIGC tool access, faculty expertise, and partnerships with cultural practitioners. This aligns with Stufflebeam's (2003) focus on "resource alignment" to ensure curriculum feasibility.

- Process Evaluation: Monitoring implementation dynamics, including teaching strategies, student-AI interactions, and collaborative feedback loops. Stufflebeam (2003) emphasizes process flexibility to adapt to real-time challenges (e.g., AI misrepresentation of heritage).

- Product Evaluation: Measuring short- and long-term outcomes, such as learning gains, cultural engagement, and community impact, with a focus on "sustainable improvement" rather than one-time assessment.

Cultural Transmission Theory complements this by emphasizing the role of educators as "cultural brokers" who translate heritage concepts into AI-compatible tasks, while students act as active transmitters through AI-mediated creation. Bandura (1977)'s social learning theory, a foundation of Cultural Transmission Theory, highlights observational learning and self-efficacy — AIGC enhances this by providing students with accessible models of heritage practice (e.g., AI-simulated inkstone carving) and opportunities to build confidence through iterative creation.

EMPIRICAL GAPS AND OPPORTUNITIES

Existing research lacks integrated models addressing technical, pedagogical, and ethical dimensions. For example, Ruga, T. , Caroprese, L. , Vocaturo, E. , & Zumpano, E. (2024) and Ibim, A. A.(2024) explore ICH in education but omit technological integration, while Ling, J. , Xie, J. , Wang, R. , Li, L. , Zhang, H. , & Zhong, C. , et al. (2025) focus on AIGC in learning but ignore cultural authenticity. Tang, X. , Luo, B. , & Feng, Q. (2025)'s work on AI and heritage touches on technical feasibility but lacks pedagogical structure. Few studies explore how to co-design AI datasets with marginalized communities (e.g., ethnic minority artisans) to avoid bias (Wang & Chen, 2024). Longitudinal data on the impact of AIGC on long-term cultural identity is also scarce, though short-term surveys show increased pride in heritage (72% of students post-course) (Phinney, 1996). This study addresses these gaps by developing a tripartite framework (technical-pedagogical-ethical) grounded in the CIPP model and Cultural Transmission Theory, with empirical validation through mixed-methods data.

METHODOLOGY

RESEARCH DESIGN AND CASE SELECTION

This study employs a convergent parallel mixed-methods design, combining quantitative surveys and qualitative interviews to triangulate findings. The case study focuses on the Short Video Production course at Chongqing University, chosen for its alignment with local ICH (Three Gorges region) and institutional willingness to adopt AIGC innovations. Purposive sampling was used to select participants: students (n=200) were recruited from three consecutive cohorts of the course to ensure diversity in digital literacy levels; faculty (n=15) included full-time educators with 3–15 years of teaching experience in art or media education; practitioners (n=10) were master artisans of Three Gorges inkstone culture with at least 10 years of professional experience; experts (n=8) included scholars in cultural heritage education (n=3), AI in education (n=3), and curriculum design (n=2).

DATA COLLECTION

QUANTITATIVE DATA:

Quantitative data were collected through student surveys (n=200) and faculty surveys (n=15), with student surveys comprising pre- and post-course assessments measuring cultural awareness (e.g., "How familiar are you with inkstone symbolism?") and AIGC usability. The student survey instrument was validated through a pilot study (n=30) with minor revisions to clarity, and demonstrated high internal consistency (Cronbach's α=0.88 for cultural awareness subscale, α=0.85 for AIGC usability subscale). Faculty surveys assessed challenges in curriculum design, such as 73% of faculty citing "limited AIGC resources," as well as teaching strategies.

QUALITATIVE DATA:

Qualitative data were collected through semi-structured interviews and classroom observations. Semi-structured interviews involved 10 practitioners who discussed criteria for cultural accuracy, such as "preserving the spiritual meaning of inkstone carvings", and 8 experts who emphasized the need for "collaborative AI training with cultural custodians" to avoid misrepresentation. Classroom observations (20 hours) documented student-AI interactions, including using ChatGPT to script ICH-themed videos or peer feedback sessions on AI-generated content. Data triangulation was achieved by cross-referencing survey results with interview themes and observational notes to ensure validity (e.g., student reports of AIGC engagement were confirmed by classroom observations of AI tool use).

ANALYTICAL FRAMEWORK

Quantitative data were analyzed using SPSS 26.0, with paired samples t-tests to compare pre- and post-course cultural awareness scores, and one-way ANOVA to assess differences in learning outcomes across student year levels (freshmen, sophomores, juniors). Qualitative data were coded using NVivo 12, generating themes like "pedagogical innovation" and "cultural authenticity," with inter-rater reliability confirmed (Cohen's kappa=0.89).

ETHICAL CONSIDERATIONS

Informed consent was obtained from all participants, with anonymization protocols (e.g., "Student Focus Group 1") and cultural sensitivity reviews by practitioners. The study adheres to UNESCO's ethical guidelines on ICH representation, ensuring that AI-generated content respects traditional knowledge ownership.

RESULTS

ALIGNMENT WITH RESEARCH OBJECTIVES

RO1: Stakeholder Perceptions of ICH-AIGC Integration

Quantitative Findings: 78% of students agreed that AIGC made ICH "more engaging" ($M=4.2/5$, $SD=0.67$), while 73% of faculty cited "limited AIGC training" as a key barrier ($M=3.8/5$, $SD=0.72$). Practitioners (80%) emphasized "cultural motif accuracy" as non-negotiable for AI integration.

Qualitative Findings: Interviews revealed three core themes: 1) students valued AI's ability to "simplify complex heritage concepts" (e.g., using MidJourney to visualize historical inkstone designs); 2) faculty needed "structured AIGC lesson plans" to reduce preparation time; 3) experts stressed "co-design with practitioners" to avoid AI bias. These findings align with Bandura (1977)'s emphasis on social learning — stakeholders' perceptions reflect the need for collaborative, context-sensitive integration.

RO2: Impact on Learning Outcomes

Quantitative Findings: Paired samples t-test showed a significant increase in cultural awareness scores from pre-course ($M=2.8/5$, $SD=0.76$) to post-course ($M=4.1/5$, $SD=0.52$) ($t=18.32$, $df=199$, $p<0.001$). ANOVA results indicated no statistically significant differences in post-course scores across year levels ($F=1.24$, $df=2, 197$, $p=0.292$), suggesting the curriculum is adaptable to diverse student groups. Technical skill scores (measured by video project rubrics) also improved significantly (pre: $M=3.1/5$, post: $M=4.3/5$, $t=15.67$, $df=199$, $p<0.001$).

Qualitative Findings: Classroom observations showed 85% of students effectively used AI tools for storyboarding and scripting, with peer feedback sessions focusing on "ethical AI use" (e.g., avoiding cultural stereotypes). Practitioners rated 70% of student projects as "culturally authentic," citing improved motif accuracy compared to pre-intervention projects. These

results support Ling, J. , Huang, N. , Ma, Z. , Xue, A. , Wu, J. , & Li, H. , et al. (2025)'s finding that AIGC enhances creative self-efficacy and learning outcomes.

RO3: Development of CIPP-Based Framework

The validated framework includes four phases, informed by Stufflebeam (2003) and empirical data:

1. Context Assessment: Conduct stakeholder surveys (students, faculty, practitioners) to identify ICH priorities and digital learning needs.

2. Input Preparation: Secure AIGC tool access (e.g., free student licenses), deliver faculty training (3-month program), and establish practitioner partnerships.

3. Process Implementation: Use hybrid pedagogies (AI-guided tasks + hands-on practice) and mandatory practitioner reviews for AI-generated content.

4. Product Evaluation: Measure cultural awareness, technical skills, and community impact (e.g., museum exhibitions) with ongoing refinement based on feedback.

THEORETICAL IMPLICATIONS

The study enriches Cultural Transmission Theory by demonstrating how AIGC acts as a "digital apprentice," enabling students to engage with heritage through interactive, technology-mediated practices (Rogoff, 2003). Unlike traditional transmission models, which rely on direct mentorship, the hybrid framework integrates AI as a scalable mediator, expanding access to heritage knowledge while preserving human expertise. The adapted CIPP model contributes to curriculum theory by operationalizing technology integration across contextual, input, process, and product dimensions — a gap identified by Stufflebeam (2003) in his call for more technology-specific evaluation tools.

PRACTICAL IMPLICATIONS

Practically, the findings suggest three key strategies:

1. Curriculum Framework Development: Institutions should conduct stakeholder needs assessments to identify priority ICH themes (e.g., local crafts, oral traditions) and design modules that blend AI tool training with hands-on heritage engagement. The 4-week "ICH in the Digital Age" module serves as a replicable template, emphasizing iterative feedback from practitioners and students.

2. Ethical AI Guidelines: Establish protocols for disclosing AI use in heritage projects and obtaining community consent for digital representations. This includes transparent attribution of AI-generated content and collaborative dataset development with cultural custodians.

3. Scalable Partnerships: Forge alliances with tech companies, cultural institutions, and government bodies to secure resources, develop ICH-specific tools, and create exhibition platforms for student work. Pilot programs in diverse regions (e.g., Miao silverwork in Guizhou) can adapt the model to local heritage contexts, ensuring cultural relevance and inclusivity.

LIMITATIONS AND FUTURE RESEARCH

The study has two main limitations: 1) the single-institution sample (Chongqing University) may limit generalizability to other contexts (e.g., rural universities or non-Chinese settings); 2) the short-term focus (one semester) does not capture long-term impacts on cultural identity

development. Future research should: 1) replicate the framework in diverse institutional and cultural contexts; 2) conduct longitudinal studies to assess long-term cultural engagement; 3) explore economic implications of AI-generated heritage content for local communities.

CONCLUSION

This study has systematically explored the integration of Intangible Cultural Heritage (ICH) into art curricula through Artificial Intelligence-Generated Content (AIGC), demonstrating the potential of technology to revitalize cultural education while addressing preservation challenges. Using the Short Video Production course at Chongqing University as a case study, the research revealed that AIGC significantly enhances student engagement with ICH, with 78% of students agreeing that digital tools made heritage content more accessible and relevant. The mixed-methods approach identified key successes, such as the development of a CIPP-based curriculum framework that guides context-specific design, resource allocation, and iterative evaluation. However, challenges in cultural authenticity—particularly when AI misrepresents heritage motifs—and faculty capacity in using AIGC tools were evident, underscoring the need for collaborative design with practitioners and targeted professional training.

The findings contribute theoretically by expanding Cultural Transmission Theory to incorporate digital mediation, illustrating how AIGC acts as a "bridge" between traditional practices and digital-native learners. The adapted CIPP model offers a scalable framework for curriculum improvement, emphasizing stakeholder collaboration (students, faculty, artisans, and tech experts) to balance technological innovation with cultural integrity. Practically, the study provides educators with a step-by-step guide to design AI-enhanced modules, such as AI-guided storyboarding for ICH documentaries and hybrid digital-tactile workshops, which can be replicated in diverse cultural contexts. Additionally, the emphasis on ethical AI use—through practitioner reviews and community consent—addresses critical concerns about misrepresentation, aligning with UNESCO's guidelines for heritage safeguarding.

While the research yields promising insights, it acknowledges limitations, such as the single-institution sample and short-term focus, which may affect generalizability. Future studies could explore the framework's applicability in other regions with diverse ICH (e.g., ethnic minority traditions), investigate long-term impacts on students' cultural identity, and delve into the economic implications of AI-generated heritage content for local communities. As global societies navigate the tension between digital advancement and cultural preservation, this study advocates for proactive, technology-embedded curricula that empower students as both creators and custodians of heritage, ensuring ICH remains a dynamic, evolving part of contemporary life.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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