

Evaluation of the Teaching Model Innovation and Inheritance Effectiveness of Arts and Crafts Skills Entering Schools under the Concept of Living Heritage

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ABSTRACT The integration of arts and crafts skills into school curricula faces challenges such as weak connection between teaching content and craft practice, insufficient teacher training, and lack of specialized pedagogical models. Under the concept of living heritage, this study examines 480 students from eight primary and secondary schools and implements a four-stage teaching model covering experience, immersion, innovation, and evaluation. The methods include school-based curriculum design for skill transmission, integration of teacher-apprentice co-creation with contextual learning, digital handcraft simulation and digital work-process archives, and quantitative assessment using inheritance ability questionnaires and work innovation scores. The results show that students in the experimental group achieve a 42.6% improvement in skill mastery, a 38.4% higher work innovation score than the control group, and a 36.7% increase in cultural understanding. Teacher-student interaction frequency and classroom satisfaction also improve significantly. The concept-driven teaching approach enhances student motivation, supports skill innovation, and promotes sustainable transmission of arts and crafts in educational settings, including textile-related craft education.

INDEX TERMS living heritage, arts and crafts education, teaching model, skill inheritance, textile arts

I. INTRODUCTION

A. RESEARCH BACKGROUND

Arts and crafts, particularly through the intricate weaving and dyeing techniques of the textile industry, play a crucial role in transmitting regional culture and national identity. These traditional textile forms embody the artistic principles and refined craftsmanship that reflect a culture's values. Textile-based artistic heritage serves as a vital means for preserving cultural identity and demonstrates the historical progression of aesthetic and technical excellence. Incorporating arts and crafts into school education contributes to the development of students' aesthetic and practical skills and provides a social context for the preservation of traditional skills. However, current teaching methods exhibit several weaknesses. First, curricula often emphasize theoretical knowledge at the expense of practical skills, cultural assimilation, and experiential learning. Second, there is a dual deficiency among teachers, who frequently lack both industry experience and expertise in educational design, leading to a reliance on demonstrative teaching. Third, the learning

process diverges from traditional models: arts and crafts education is typically confined to extracurricular activities, lacking systematic evaluation and integration into formal assessment, which diminishes instructional effectiveness. On campus, skills instruction is often reduced to ornamental displays or activity-based content, lacking the depth required for both inheritance and innovative development. To address these issues, it is essential to develop a teaching model that balances practical experience with creative pedagogy, integrates skill acquisition with knowledge, and embeds skills within the fabric of campus life.

B. RESEARCH OBJECTIVES

This study aims to construct a teaching methodology for arts and crafts skills based on the concept of living heritage, integrating traditional textile craftsmanship to create a more interactive and generative learning environment within a modern industrial context. By anchoring instruction in the living techniques of fiber arts, the model fosters a dynamic environment where students can engage with both the his-

torical and technical evolution of textile production. The integration of on-campus and off-campus coursework allows students to experience skills in authentic contexts, breaking down the barriers between skill transmission and academic instruction. The curriculum is restructured using project-based learning to link creation, culture, and art, thereby enhancing the systematic and hierarchical organization of content. A co-guidance approach, involving both teachers and craftspeople, transforms the practical expertise of artisans into a classroom resource. The evaluation framework addresses assessment deficiencies by establishing three models: process archives, work innovation, and cultural perception, to assess the effectiveness of teaching interventions. Through a large-scale empirical survey, the study verifies the educational significance of the living heritage teaching model, offering a scalable solution for integrating arts and crafts skills into schools and transitioning skills education from passive participation to knowledge construction and innovative inheritance.

II. THEORETICAL FOUNDATION AND RESEARCH FRAMEWORK

A. THE CONNOTATION AND CHARACTERISTICS OF LIVING HERITAGE

The concept of living heritage emphasizes the generation and transmission of cultural skills within social and educational contexts, highlighting the dynamic and participatory nature of the process. In contrast to static preservation, living heritage prioritizes the active re-creation of cultural skills through practical engagement, thereby maintaining cultural vitality. Central to this approach is the collaboration between knowledge bearers and learners; the learning process itself becomes the arena for the regeneration of cultural skills. In educational contexts, living heritage supports the renewal of traditional skills by establishing meaningful connections with students through educational activities. By designing experiential scenarios and open-ended tasks, learners develop understanding and creative capacity through active participation. Thus, living heritage constitutes a structural system of dynamic practice, reflective cognition and social dissemination, providing a robust theoretical foundation for integrating arts and crafts skills into schools.

B. CULTURAL VALUE AND SOCIAL FUNCTION OF ARTS AND CRAFTS EDUCATION

Arts and crafts education transmits the spirit of creativity, aesthetic awareness, and cultural memory as fundamental educational objectives. These objectives encompass cultural understanding and value recognition. Integrating arts and crafts into curricula fosters students' appreciation of the principle that creating things is a form of education, and

unites manual labor with aesthetic experience. Through practical engagement, students can discern the cultural attributes of materials and grasp the logical structure of craft thinking [1,2]. Schools function as hubs for the dissemination of social culture. The social function of arts and crafts education is further reflected in the activation of local intangible cultural heritage resources and the promotion of community cultural regeneration. This educational approach facilitates the interaction between education and social development through cultural practice, establishing a foundation for the ecology of skills [3].

C. THEORETICAL SUPPORT FOR TEACHING INNOVATION

Experiential Learning Theory (ELT) posits that learners construct knowledge through experience, reflection, and application. In arts and crafts skills education, this involves sensory engagement, reflective analysis, and creative transformation, with teachers primarily responsible for guidance and assessment [4,5]. The constructivist framework, conversely, asserts that knowledge arises from learners' interactions with their environment. Applying constructivist principles to skills inheritance education entails creating open classrooms, generating tasks, and fostering understanding through active engagement. By integrating these two theoretical perspectives, a dynamic teaching method is constructed in which experiential tasks and collaborative creation transform instruction from passive reception to active participation, aligning the learning of traditional skills with contemporary educational logic [6,7].

III. RESEARCH METHODS AND PROCESS DESIGN

A. RESEARCH SUBJECTS AND SAMPLE SELECTION

Eight schools at the basic education level—including urban and rural, primary and secondary, and art-focused institutions—were selected as sampling sites, encompassing a total of 480 students aged 9–16. The study spanned one academic year. Students were divided into experimental and control groups based on teaching conditions and regional cultural resources: the experimental group received the living heritage-oriented teaching intervention, while the control group continued with standard art education [8]. The selected crafts represented six categories—printmaking, leather craft, bamboo weaving, dyeing and weaving, folk sculpture, and metalwork—to ensure regional and craft-type diversity [9,10]. The teaching team comprised 24 art teachers and 8 folk artists, who assumed instructional and guidance roles, respectively. This research was approved by the Ethics Committee of Xinjiang Normal University and conducted in accordance with the Declaration of Helsinki. All participants provided informed consent. Table 1 presents the distribution of research samples and process project types.

TABLE 1. Distribution of Research Samples and Statistics of Process Project Types

School Number	Region Type	Number of Participating Students	Number of Teachers	Process Project Category
A1	Urban Primary School	60	4	Printmaking, Leather Crafts
A2	Urban Middle School	68	3	Metalwork, Dyeing and Weaving
A3	County-Level Primary School	52	3	Bamboo Weaving
A4	County-Level Middle School	58	3	Folk Sculpture
A5–A8	Rural Schools	242	11	Traditional Integrated Skills

Primary data sources included classroom videos, student work, learning logs, and teacher interviews, all of which were analyzed to assess instructional effectiveness. The sample design aimed to demonstrate the applicability and scalability of the teaching methods across diverse regional cultures.

B. CONSTRUCTION OF THE TEACHING MODEL

The instructional process was organized around the sequence of experience-immersion-innovation-evaluation, which encompasses skill cognition, practice, and creative generation. The experience phase enables students to explore craftsmanship through material experiments and creative tasks. The immersion phase involves bringing artisans

into the classroom for demonstration and contextual learning [11,12]. The innovation phase encourages students to reconstruct traditional patterns and techniques through personal and modern design. The evaluation phase integrates learning records, work displays, and reflective dialogues to provide comprehensive feedback.

A school-based curriculum system was established utilizing both school and local resources, with thematic units tailored to local crafts. Curriculum content was developed along three dimensions: origin exploration, practice, and reconstruction, emphasizing project-based progression and process tracking. Table 2 outlines the structure of the arts and crafts skills teaching model guided by living heritage.

TABLE 2. Structure of the Teaching Model for Arts and Crafts Skills Guided by Living Heritage

Module Name	Teaching Objectives	Teaching Methods	Teaching Resources	Expected Results
Experience Module	Master process principles	Material experiments, group tasks	On-campus workshops	Technique recognition, preliminary operation
Immersion Module	Understand cultural context	Master craftsman's explanation, on-site demonstration	Off-campus experience base	Cultural understanding, skill enhancement
Innovation Module	Design objects	Thematic creation, self-evaluation showcase	On-campus laboratories	Innovative works, design solutions
Evaluation Module	Reflect on learning process	Results presentation, peer review	Digital archives platform	Comprehensive learning report

The model emphasizes openness and interdisciplinarity, empowering students to regenerate skills within a dynamic learning context.

C. TEACHING IMPLEMENTATION STRATEGIES

The instructional model is based on a principal-apprentice co-production framework, wherein both educators and craftsmen collaboratively deliver instruction. Differentiated instruction and collaborative creation are implemented: teachers primarily provide design and reflective guidance, while craftspeople focus on practical demonstrations and experiential transfer. Joint lesson planning and live demonstrations ensure simultaneous instruction and skills transmission. An archiving system is established, enabling stu-

dents to document, reflect, and augment their portfolios with textual and multimedia content throughout the course. The contextual learning approach is extended beyond the classroom to off-campus communities, intangible cultural heritage workshops, and exhibition spaces, fostering social appreciation of artifacts. Digital tools, such as 3D simulation software, are utilized to analyze forms and facilitate virtual operations training. Assessment incorporates behavioral observation scales, artwork rating scales, and cross-validation of learning log content.

In this system, teachers are not merely transmitters of knowledge but act as facilitators of the learning process. The tacit knowledge of craftsmen is systematically integrated into classroom instruction, weakening traditional authority

structures and redirecting skills education toward cultural co-construction and experiential knowledge sharing.

D. EFFECTIVENESS EVALUATION METHODS

Two principal methods-quantitative and qualitative-were employed to assess effectiveness. Quantitative indicators include a questionnaire on inheritance ability, scores for work innovation, and evaluations of cultural understanding. These are measured across three dimensions: skill mastery, collaborative involvement, and cultural expression, using 25 Likert-scale items. Professional judges assess the creativity of student work from four perspectives: creative conception, technical execution, material innovation, and cultural presentation. Cultural understanding is evaluated through a combination of cognitive questioning and narrative reflection, measuring students' knowledge of cultural symbols and the meaning behind their creations. Qualitative indicators are derived from classroom observation, student interviews, and teacher logs; content analysis is used to code attitudes toward learning, classroom engagement, and innovative behaviors, enabling multi-dimensional, longitudinal comparison and cross-referencing of data.

IV. EXPERIMENTAL RESULTS AND ANALYSIS

A. QUANTITATIVE RESULTS

Quantitative findings include questionnaire statistics, artwork scoring data, and classroom observation records over one semester of teaching intervention. Pre- and post-test comparisons between the experimental and control groups reveal substantial gains in the experimental group regarding skill mastery, creativity, and cultural knowledge, with an average improvement of 42.6%. Technical proficiency also increased significantly. The innovation score for student artwork was 38.4% higher than that of the control group, indicating enhanced creativity in creation, material usage, and symbolic transformation. Cultural understanding scores rose by 36.7%, reflecting increased awareness and deliberate incorporation of cultural imagery and regional symbols. Teacher-student interaction frequency increased by approximately 45%, with students demonstrating greater willingness to ask questions and collaborate. The proportion of students reporting high classroom satisfaction increased from 26.4% before the intervention to 68.9% after the intervention. A summary of these quantitative findings is provided in Table 3.

TABLE 3. Quantitative Comparison of Teaching Effectiveness Between the Experimental Group and the Control Group

Indicator	Pre-test Mean (Experimental Group)	Post-test Mean (Experimental Group)	Post-test Mean (Control Group)	Improvement (%)	p-value
Skill Mastery	52.4	74.7	55.1	42.6	<0.001
Work Innovation Score	58.2	80.6	58.3	38.4	<0.001
Cultural Understanding Score	60.1	82.1	60.7	36.7	<0.01
Teacher-Student Interaction Frequency (times/lesson)	18.5	26.8	19.1	45.0	<0.05
Classroom Satisfaction (%)	26.4	68.9	31.2	42.5	<0.01
Continuous Time Invested in Learning (minutes/lesson)	28.7	41.3	29.4	43.9	<0.05

Paired-samples t-tests and ANOVA confirmed that the living heritage-oriented teaching model had a statistically significant positive impact on student participation and learning outcomes. Classroom observations indicated that students in the experimental group engaged more actively with traditional craft materials and participated in classroom discussions at nearly twice the rate of the control group. According to student surveys, 75% of respondents believed that the act of creation enhanced their appreciation for the cultural significance of the crafts.

B. QUALITATIVE ANALYSIS

Qualitative analysis of learning process records, teacher-student interviews, and classroom observations revealed that students increasingly demonstrated cultural identity and creativity, often incorporating local culture into their work and

adapting techniques introduced by instructors. For example, during the bamboo weaving project, students transformed traditional bamboo wares into modern lamps by altering shapes and patterns. Student journals reflected a shift in perception, with craftsmanship viewed less as rote manipulation and more as a means of storytelling and cultural internalization. The role of teachers also evolved toward that of learning facilitators. The inclusion of artisans fostered a co-creative classroom environment, wherein teachers guided tasks and reflective dialogue, nurturing student autonomy and self-directed research. Teaching reflections indicated the progressive acquisition of tacit knowledge, achieved through collective guidance and the complementary integration of educational expertise and technical experience.

With respect to classroom interaction, students in the ex-

perimental group more frequently examined changes in materials, patterns, and cultural connotations compared to the control group, evidencing a heightened collective inquiry. Approximately 63% of students revised their portfolios, highlighting ongoing self-improvement through reflection and correction. Exhibitions and assessments increased students' awareness of creative intent, with the use of cultural symbols nearly doubling. Overall, instruction based on living heritage principles not only enhanced skill development but also cultivated active learners and promoted cultural creativity, shifting emphasis from mere skill demonstration to cultural regeneration.

V. CONCLUSIONS AND RECOMMENDATIONS

A. RESEARCH CONCLUSIONS

The arts and crafts teaching model grounded in the concept of living heritage has demonstrated substantial educational value in school settings by revitalizing traditional textile techniques and aligning them with the innovative demands of the contemporary textile industry. This approach ensures the sustainable transmission of textile craftsmanship while equipping students to integrate cultural heritage into modern fiber art and design. Experimental results confirm improvements in students' skill mastery, aesthetic understanding, and cultural creativity, facilitated by the experience-immersion-innovation-evaluation approach, which transforms skills acquisition from mechanical repetition to a process of critical thinking and expressive development. Quantitative data show average improvements of 42.6% in skill mastery, 38.4% in work innovation, and 36.7% in cultural understanding. The teaching model achieved its objectives, fostering both skill development and cultural awareness. Classroom observation data indicate a 45% increase in interaction frequency, with significant gains in active learning, collaborative creation, and open, guiding teaching practices. The integration of artisans and authentic cultural environments links instruction to social and cultural practice, using the school environment as a platform for skill inheritance and cultural regeneration. Traditional crafts have thus transitioned from passive exhibition to continuous evolution, establishing a replicable and scalable teaching paradigm that supports art curriculum reform and the protection of intangible cultural heritage in basic education.

B. RECOMMENDATIONS FOR PROMOTION AND IMPROVEMENT

Based on the experimental findings, three recommendations for promotion and improvement are proposed. First, institutionalize collaborative relationships between teachers and craftspeople by establishing school-enterprise-community cooperation mechanisms. This entails establishing linkages between schools and craft workshops or local intangible cultural heritage training centers, fostering closer integration of curricular learning and social practice through co-developed courses and joint workshops, and strengthening teacher training to enable art educators to effectively interpret craft

practices and their cultural significance through a subject-skill integrated training approach. Furthermore, develop a digital support system—such as a cloud resource platform—for integrating skill images, teaching cases, and artwork archives, thereby supporting cross-school sharing, remote instruction, and student learning file management.

Second, create adaptable curriculum templates for different educational levels: primary education should emphasize material experience and modeling; secondary education should focus on design transformation and cultural exploration; and higher education should prioritize cross-media innovation. This tiered approach can establish a comprehensive chain for craft and art inheritance and training. Third, continued improvement of policies, resource allocation, and evaluation systems will promote the effective implementation of the living heritage concept within the textile education system, achieving a symbiotic relationship between specialized skill training and cultural innovation. This optimized framework ensures the sustainable preservation of textile craftsmanship while driving creative evolution in the industry through integrated pedagogical reform.

AUTHOR CONTRIBUTIONS

Conceptualization -Xiangbing Li and Yong Li; methodology - Xiangbing Li and Yong Li; investigation - Xiangbing Li and Yong Li; writing-original draft preparation - Xiangbing Li and Yong Li. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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HUMAN RESEARCH SUBJECTS

This study was approved by the Ethics Committee of Xinjiang Normal University, and was performed in accordance with the principles of the Declaration of Helsinki. All eligible participants signed an informed consent form.

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