Exploration of Cultural Education Path of Visual Communication Design Software Courses in Applied Universities Based on Intangible Cultural Heritage

Danni Dong

Liaoning Communication University, Shenyang, Liaoning, 110136, China

15140610236@163.com

Abstract. Intangible cultural heritage, as an important carrier of excellent traditional Chinese culture, carries profound historical memories and cultural genes. With the continuous advancement of the "new liberal arts" construction and the "Digital China" strategy, application-oriented universities face dual challenges of cultural inheritance and technological application in talent cultivation. This paper takes three core software courses in the Visual Communication Design major at Liaoning University of Communication as the research object, focusing on "Animate software dynamic design application", "Illustrator software commercial design application", and "Cinema 4D software exhibition design application" to conduct an 18-week teaching practice, exploring a three-stage educational path of "cultural cognition - skill translation - value practice". The research adopts the action research method, combining various methods such as questionnaire surveys, classroom observations, work assessments, and interviews, to systematically analyze how intangible cultural heritage elements can be effectively integrated into the entire process of software teaching, enhancing students' cultural understanding, design transformation ability, and social responsibility. Practice has shown that the deep integration of intangible cultural heritage and software courses not only enhances students' cultural identity and innovation ability, but also provides a feasible paradigm for application-oriented universities to achieve the educational goal of "cultivating people through culture and educating people through technology".

Keywords: Intangible Cultural Heritage; Visual Communication Design; Software Courses; Cultural Education; Applied University.

1. Introduction

Under the dual background of the "Digital China" strategy and the construction of "New Liberal Arts", applied universities have been entrusted with more diverse educational missions. Particularly in the field of visual communication design, students are expected to engage in brand planning, digital media communication, and cultural and creative product development in the future, where their aesthetic orientation and cultural literacy directly influence the national cultural image in the context of mass communication [1]. However, some universities still exhibit tendencies of "emphasizing skills over culture" and "over-reliance on project-oriented teaching" in visual communication design education, resulting in student works lacking cultural depth and originality. As an important component of China's excellent traditional culture, intangible cultural heritage possesses distinct regional, historical, and narrative characteristics, making it a rare cultural resource in design education. It not only carries ethnic memory but also provides rich visual symbols and emotional expressions for modern design [2]. Yet, how to organically integrate intangible cultural heritage content into software courses centered on technical operations, achieving the unity of knowledge transmission, ability cultivation, and value shaping, remains a pressing challenge in current teaching reforms. Therefore, this study attempts to explore systematic integration paths of intangible cultural heritage into visual communication design software courses from a teaching practice perspective, aiming to construct a "cultural education" paradigm with promotional value.

2. From "Intangible Cultural Heritage into Classroom" to "Cultural Depth Teaching"

In recent years, research on integrating intangible cultural heritage (ICH) into classrooms has grown significantly, primarily focusing on three dimensions. At the macro level, efforts concentrate on policy interpretation and conceptual dissemination, introducing concepts like "living inheritance" and "cultural innovation empowerment." The meso level emphasizes curriculum module design and optimization, incorporating traditional elements such as paper-cutting, embroidery, and New Year paintings into courses like graphic creativity and packaging design. At the micro level, researchers explore digital technologies like VR, AR, and short videos to recreate the processes and contexts of traditional crafts [3].

However, current research predominantly adopts superficial or case-based approaches, lacking systematic reforms to the overall framework of software courses and in-depth evaluations of teaching effectiveness. Particularly in visual communication design programs, intangible cultural heritage (ICH) is frequently treated as peripheral content, failing to be genuinely integrated into instructional objectives, teaching processes, and assessment systems.

This study, grounded in cultural memory theory, constructivist learning theory, and collaborative education theory, proposes the "deep teaching" concept for intangible cultural heritage (ICH) in software courses. Cultural memory theory posits that intergenerational transmission of cultural memory requires media carriers, with modern tools like digital interaction and dynamic graphics offering new pathways for ICH "activation." Constructivist learning theory emphasizes students' knowledge construction through "learning by doing" in real-world contexts, a principle perfectly aligned with ICH project-based teaching. Collaborative education theory advocates for multi-stakeholder platforms involving universities, heritage bearers, enterprises, and governments to achieve resource sharing and value co-creation [4].

3. Systematic Exploration of Teaching Practice

This study involved 90 students from three parallel classes of the Visual Communication Design program at Liaoning Media University (Class of 2022), employing the action research method for two 9-week teaching cycles totaling 18 weeks. Through a combination of questionnaire surveys, classroom observations, student interviews, and portfolio assessments, the research systematically collected teaching data and student feedback to dynamically adjust instructional strategies.

The research proposes a "Three-Stage Six-Aspect" framework in pedagogical philosophy, employing project-based and contextualized teaching to guide students in understanding intangible cultural heritage (ICH). By leveraging digital and visual technologies, it facilitates the modern adaptation of traditional elements, ultimately promoting ICH's social dissemination through productization and communication practices [5]. The teaching objectives not only focus on students' software operation skills but also emphasize the comprehensive enhancement of their cultural comprehension, design transformation capabilities, and social responsibility awareness.

To ensure the scientific rigor and practical applicability of the teaching practice, the research team conducted a two-week preliminary survey before the course began, assessing students' awareness of intangible cultural heritage (ICH), foundational software skills, and learning interests. The survey revealed that over 70% of students had only superficial knowledge of ICH, lacking systematic understanding. While most demonstrated basic software proficiency, they showed significant gaps in visualizing cultural content. Addressing this, the team designed the course with "cultural integration" as its core principle, emphasizing that ICH content should not be treated as an "add-on module" but rather as the "central thread" running through the entire project.

In practice, the course implements a " dual-mentor system" where in-house faculty teach software skills and manage project workflows, while intangible cultural heritage inheritors or local artisans provide cultural interpretation and aesthetic guidance. Instructional spaces extend beyond traditional classrooms to real-world cultural settings like museums, heritage workshops, and

cultural innovation markets, enhancing student immersion and engagement. Additionally, the program incorporates " formative assessment" mechanisms, evaluating students' cultural understanding, design execution, teamwork, and communication skills within a comprehensive framework, moving beyond judging solely by final product quality.

Through two rounds of teaching cycles with continuous correction and optimization, the course has gradually formed a closed-loop teaching system integrating culture, technology, and market. This not only enhances students' professional skills but also strengthens their sense of identity with local culture and awareness of cultural dissemination, providing a feasible model for the systematic implementation of intangible cultural heritage education in applied universities.

4. The Integration Path of Intangible Cultural Heritage in Software Courses

In the course "Animate Software for Dynamic Design Applications," the teaching centers on the theme of "Digital Revitalization of Shadow Puppetry," emphasizing the fusion of traditional performing arts with modern interactive technologies. At the beginning of the course, students gain an in-depth understanding of shadow puppetry's historical origins, character classifications, performance mechanisms, and aesthetic features through on-site performances, lectures by inheritors, and literature review. Building on this foundation, students work in groups to select specific plays or characters for animation adaptation, using the Animate software to complete character modeling, motion design, and interaction logic development.

During the project, students not only mastered technical skills like animation timelines, layer structures, and ActionScript scripts, but also explored how to digitally preserve the "silhouette beauty" and "dramatic tension" of shadow puppetry. For instance, some teams incorporated "light and shadow variations" to mimic traditional shadow play lighting effects, while others designed a "story selection" feature allowing audience interaction by clicking on the screen to influence plot development. The final works were exhibited at the university's "Digital Exhibition of Intangible Cultural Heritage," where visitors interacted with animations via touchscreens, experiencing the digital rebirth of traditional art and receiving positive feedback.

The course "Illustrator Software for Commercial Design Applications" focuses on "Contemporary Interpretation of Miao Embroidery Patterns," emphasizing the integration of traditional totems with modern consumer culture. During the initial phase, students conducted field research in Qiandongnan, Guizhou, immersing themselves in Miao villages to document local attire, embroidery motifs, and color palettes. They also engaged with Miao embroiderers to explore the cultural symbolism and symbolic systems behind these patterns. Upon returning to campus, students utilized the collected patterns as a foundation, employing Illustrator software for vector retouching and graphic redesign. By incorporating contemporary aesthetic trends, they created a series of cultural and creative products tailored for young consumers, including canvas bags, phone cases, brooches, and notebook covers.

During the design process, teachers guide students to explore questions like "how traditional totems transform into modern graphic languages" and "how ethnic cultures integrate into everyday consumer contexts," encouraging them to innovate in form while preserving cultural core meanings. Some works adopt minimalist geometric compositions, while others retain the high-saturation color palette of Miao embroidery, creating striking visual impact. Other pieces blend traditional motifs with contemporary illustration styles, delivering trendier visual effects. In the final phase of the course, students must write product descriptions that articulate design concepts and cultural origins, enhancing their cultural expression and market communication skills.

The course "Cinema 4D Software for Exhibition Design Applications" centers on the theme "3D Narratives of Ceramic Artistry," highlighting the fusion of traditional craftsmanship with immersive display technologies. In collaboration with a local ceramic museum, students create digital exhibits for museum digital tours by modeling ceramic production processes and demonstrating them dynamically using Cinema 4D, based on the museum's collections. The project requires students to master technical skills such as modeling, material texturing, lighting rendering, and animation editing,

while also understanding the production techniques, cultural context, and aesthetic characteristics of ceramics.

During the creative process, students simulated the complete workflow from "clay practice," "slab throwing," "slab finishing," "glazing," to "firing," using cinematic language and rhythmic control to enhance narrative tension. For instance, one student employed a "microscopic perspective" to demonstrate the morphological changes of clay during slab throwing, complemented by sound effects and textual explanations to deepen audience comprehension and immersion. Another student designed a "timeline-style" display, juxtaposing ceramic styles from different historical periods to highlight craft evolution and cultural continuity. The final works were adopted by the museum as digital tour content, with some pieces also exhibited in local cultural tourism promotions, achieving social transformation of educational outcomes.

Through systematic practice in these three courses, students not only enhanced their software operation and project execution skills, but more importantly, developed a deep respect and understanding of traditional craftsmanship within authentic cultural contexts. This process gradually cultivated a design philosophy centered on culture, supported by technology, and aimed at dissemination. This innovative teaching model dismantles the barriers between culture and technology, enabling intangible cultural heritage to truly integrate into classrooms, artworks, and daily life. It provides a replicable and scalable practical approach for cultural education in higher education institutions.

5. The Virtuous Mechanism of Competition Driven and Achievement Feedback

Based on teaching practice, the curriculum team actively organizes students to participate in various design competitions and exhibitions, achieving a series of results. In the 4th "Dijia Cup" Chinese Excellent Traditional Culture Innovation Design Competition, Hu Lanyue's "Peking Opera Art", Hu Zelin's "Mortise and Tenon Inheritance", Gao Ziqi's "Mortise and Tenon Inheritance", and Jin Siyu's "Tang Xiaohu" won second prizes respectively, while Du Xiaojiao's "The Soul of Opera - Jing", Liu Lin's "Oil Paper Umbrella", and Fang Tianhao's "Lively Lion Dance" won third prizes. This verified the feasibility of the "intangible cultural heritage + software" teaching path and prompted teachers to optimize project selection and evaluation criteria.

In the "Cross-Strait Intangible Cultural Heritage Digital Cultural Creativity" category of the 2024 China University Student Cultural Creativity Design Competition, the entries "A Kite" by Zhai Changqi, "Tuantuan" by Li Tan, and "Laobian Dumplings" by Zhang Wenjiao were awarded third prize. This has prompted the course team to update their technical approach and teaching methods, achieving "promoting reform through competition".

In the 3rd Liaoning Provincial Industrial Heritage Renovation and Protection Innovation Design Competition and the Liaoning Lottery "Mountains and Seas Have Feelings, Tianliao Dining" Theme Collection Competition, the works "City Remnants" by Tian Hongjia, "Fortune Comes" by Sun Zihan, and "Mountains and Seas Have Feelings, Tianliao Dining" by Zhang Lin were awarded third prize, forming a virtuous cycle of "promoting education and research through competitions", significantly enhancing the quality of professional teaching and social recognition.

6. Conclusion and Prospects

Research indicates that the deep integration of intangible cultural heritage with visual communication design software courses in application-oriented universities is not only practically feasible but also significantly enhances students' cultural identity, innovation ability, and social responsibility. Through the three-stage path of "cultural cognition - skill translation - value practice", students can understand, transform, and disseminate tradition in real-world projects, truly achieving the unity of knowledge and action.

In future promotion efforts, it is recommended to continuously invest in institutional safeguards, teacher development, resource integration, and evaluation optimization. For instance, incorporating "intangible cultural heritage credits" into talent training programs and establishing a regular mechanism for inheritor residencies on campus; conducting dual-core training in "art + technology" to enhance teachers' interdisciplinary teaching abilities; collaborating with local governments to build an "intangible cultural heritage digital asset library" to reduce course development costs; introducing learning analytics technology to track students' cultural identity and ability enhancement based on big data, forming a dynamic improvement loop.

The inheritance of intangible cultural heritage is not a mere act of "importing", but rather endowing it with new life in the digital era. Application-oriented universities should fully leverage the technological advantages of software courses, allowing young students to touch tradition through creation and gain confidence through dissemination, truly fulfilling the mission of the era to "educate people through culture and nurture people through beauty". The inheritance of intangible cultural heritage is not a mere act of "importing", but rather endowing it with new life in the digital era. The visual communication design major in application-oriented universities should fully leverage the technological advantages of software courses, allowing young students to touch tradition through creation and gain confidence through dissemination, truly fulfilling the mission of the era to "educate people through culture and nurture people through beauty".

Acknowledgments

This paper presents the research outcomes of Liaoning Media University's 2024 institutional project titled "Exploring Cultural Education Pathways in Visual Communication Design Software Courses for Applied Universities Based on Intangible Cultural Heritage Inheritance" (2024XJ007).

References

[1] H. Li, An analysis of applied talent training strategies for visual communication design majors in universities, Daguan. 7 (2022) 24-26.

[2] J.W. Chen, Form-meaning symbiosis and art-technology integration: A study on design thinking for visual communication, Green Packaging. 1 (2023) 159-163.

[3] Y. Gong, Innovation in visual communication design curriculum teaching under the background of "new liberal arts", Popular Literature and Art. 16 (2022) 165-167.

[4] Z.H. Shi, Y. Zhang, Research on the path of first-class major construction in application-oriented undergraduate universities, Journal of Higher Education. 9(14) (2023) 13-16.

[5] Q.M. Cheng, Construction of intangible cultural heritage digital twin space from the perspective of metaverse, Art Communication Research. 2 (2025) 55-60.

[6] C. Li, S.H. Yu, Research and practice on the construction of first-class undergraduate majors in application-oriented universities, New Curriculum Research. 27 (2022) 37-40.