

Mechanism and Theoretical Construction of the Educational Model Designed for "Three Integrations" in Talent Cultivation

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Abstract

Against the dual backdrop of generative artificial intelligence and the deepening integration of industry and education, design education in local universities faces the triple dilemmas of superficial application of intelligent technology, superficial collaboration between industry and education, and formalized cultural inheritance. There is a clear disconnect between talent cultivation, local industry needs, and the mission of cultural inheritance. The "Three-in-One Education" design education model, with AI empowerment, cultural soul-casting, and local innovation as its core pillars, constructs a coupled operation mechanism to solve the problem of education that separates the three elements. This paper systematically deconstructs the internal operation logic of the model, combines theories such as constructivism and embodied cognition to complete theoretical construction, refines core theoretical components, and verifies its dual effectiveness of education and industry through local cultural and creative projects. Research shows that this model achieves collaborative improvement in talent cultivation, cultural innovation, and local services through a closed-loop system, providing a replicable theoretical paradigm and practical reference for the high-quality development of design education in private universities.

Keywords

Three-in-One education, design education, local cultural innovation, theoretical construction.

1. Introduction

The report of the 20th National Congress of the Communist Party of China explicitly proposed "promoting the integration of industry and education, and the convergence of science and education," emphasizing "enhancing the dissemination and influence of Chinese civilization," and outlined the core direction for the reform of design education in local universities in the new era. Currently, generative artificial intelligence represented by AIGC is profoundly reshaping the production logic and creative pathways of the design industry. Meanwhile, the revitalization of regional culture and the upgrading of the cultural tourism industry have raised higher requirements for the comprehensive qualities of design talents [1]. As the main platform for cultivating applied design talents, local universities not only need to respond to the demand for teaching innovation brought about by technological changes but also bear the social responsibility of inheriting regional culture and serving regional development, finding a balance in educating students in the dual dimensions of technological iteration and cultural inheritance.

The "Three Integrations Education" model is a teaching reform achievement formed by the design professional team of Liaoning University of Communication after four years of exploration. Relying on the construction of provincial first-class courses in packaging design, and collaborating with local cultural and historical institutions such as the Shenyang Palace

Museum, it deeply integrates AI technology, regional culture, and local services into the entire teaching process. It has produced 27 sets of listed cultural and creative products, thousands of student competition awards, and other tangible achievements. This article aims to systematically refine the theory and deconstruct the mechanism of this practical model, clarify its internal operating logic and academic support, and construct a design education paradigm that combines practical feasibility and theoretical rigor, providing a reference for teaching reforms in similar institutions.

2. The Practical Dilemmas of Design Education in Local Universities

2.1. The Application of Intelligent Technology is Superficial, and There is a Lack of Collaborative Education Mechanism

The popularization of AIGC technology has brought efficiency innovations to design teaching, but the application in most institutions still remains at the tool level: courses only explain the operational steps of AI drawing and scheme generation, without integrating intelligent technology into the complete creative process of "cultural research - creative generation - design verification - iterative optimization". This superficial application can easily lead students to form a dependence on technology, weaken their original thinking ability and cultural judgment, and even lead to issues such as copying overseas materials and ignoring copyright norms. Some courses even equate AI-generated results directly with student assignments, weakening the cultivation of students' creative ideas and cultural critical thinking abilities, and deviating from the core goal of educating people. At the same time, there is a lack of systematic guidance on technological ethics and creative subjectivity in teaching, and a deep educational mechanism of "human-machine collaboration" has not been established. The value of technological tools and the value of educating people have not been organically unified [2].

2.2. The Integration of Industry and Education is Superficial, and the Value Loop Has Not Yet been Formed

Deepening industry-education integration is the core direction of reform in application-oriented universities. However, most current practices face the dilemma of "integration without depth and project virtualization". Cooperation between schools and enterprises mostly remains at superficial forms such as base listing, expert lectures, and student visits, without systematically embedding real industrial projects into course teaching. Students' after-class assignments often focus on virtual business propositions, lacking practical scenarios that align with real market demands, making it difficult to establish user thinking and market awareness. Students lack a complete experience of the entire project process, have insufficient understanding of practical factors such as market demand, user preferences, and implementation costs, and require a longer adaptation period after graduation to enter the industry. Under this model, teaching outcomes cannot be directly translated into industrial value, and market feedback is difficult to nurture the optimization of teaching content. A value-added closed loop of "teaching output - industrial application - feedback iteration" has not been formed, and the educational effectiveness of industry-education collaboration has not been fully unleashed [3].

2.3. Cultural Inheritance Becomes Formalized, and the Path for Innovative Transformation is Blocked

Integrating regional culture into design education is a crucial path to fostering students' cultural confidence. However, existing teaching methods commonly suffer from the issues of being superficial and symbolic. Most courses merely provide a brief introduction to regional cultural elements, guiding students to directly appropriate cultural symbols for design, without deeply decoding cultural connotations, historical contexts, and public sentiments. This "adding

culture for the sake of adding culture" approach fails to enable students to truly understand the value of culture and produces cultural creative products that fail to impress consumers. This formalized integration of culture leads to serious homogenization of design works, lacking cultural core and emotional warmth. It fails to achieve the educational goal of cultural inheritance and produces cultural innovative products that lack market competitiveness. How to guide students to make the leap from "appropriation of cultural symbols" to "translation of cultural connotations" is a common difficulty in current design education.

3. The Internal Operating Mechanism of the Educational Model Designed for "Three Integrations" in Talent Cultivation

The "Three-Integration Education" model is driven by AI empowerment, supported by cultural soul-building, and guided by local innovation. These three dimensions are not simply additive, but an organic whole that is interconnected and mutually supportive, jointly forming a closed-loop design education system.

3.1. AI Empowerment: A Technology-driven Mechanism Embedded Throughout the Entire Process

In the "three integrations" educational model, AI empowerment transcends the mere understanding of "tool usage" by deeply embedding intelligent technology into the entire creative process, establishing a creative partnership of "human-machine collaboration". During the cultural research stage, AI technology is employed to organize regional cultural literature, extract visual symbols, and analyze audience preferences, thereby enhancing the efficiency and comprehensiveness of cultural research. In the creative generation stage, with students' cultural reflection and creative conception at the core, AI is utilized to facilitate rapid deduction of multiple schemes and visual effect previews, expanding the boundaries and possibilities of creativity. In the design verification stage, AI is used to simulate user visual perception, evaluate communication effects, and assist in optimizing design schemes. Simultaneously, digital creation ethics education is integrated into the entire process, clarifying copyright boundaries and originality bottom lines, guiding students to rationally harness technology, avoiding technological dependence, and strengthening their cultural judgment and creative dominance in human-machine collaboration [4].

3.2. Culture Shapes The Soul: The Connotation Support Mechanism of Layered Penetration

Cultural soul-building is the core of the "three integrations" educational model, which integrates regional culture throughout the entire teaching process through layered penetration, avoiding superficial accumulation of cultural elements. The basic layer involves cultural cognition penetration, systematically sorting out regional resources such as Liaoning's cultural relics, industrial heritage, and intangible cultural heritage and folk customs, building a localized cultural material library, and guiding students to understand the historical context and emotional connotation behind the culture. The intermediate layer focuses on translation ability training, conducting visual transformation training centered on cultural connotation, guiding students to extract cultural spirit rather than copying symbols, and achieving contemporary expression of traditional culture. The top layer is value identity shaping, through successful practices of local cultural innovation, allowing students to perceive the contemporary value of regional culture in their creation, and establishing a sense of mission for cultural confidence and cultural inheritance. The three-layer progressive cultural penetration achieves the unity of knowledge impartation, ability cultivation, and value guidance.

3.3. Local Revitalization: A Project-oriented Mechanism for Value Implementation

Local revitalization serves as the practical carrier and value outlet for the "three integrations" educational model, extending teaching scenarios to align with the real needs of local development. This model is linked to authentic local projects such as the cultural and creative development of the Shenyang Forbidden City, the revitalization of Liaoning's time-honored brands, and the packaging upgrade of rural agricultural specialties. It breaks down course knowledge points and integrates them into various aspects of these projects, allowing students to complete design practices in real-world scenarios. Student works are no longer mere classroom assignments for grading, but directly implementable design schemes, with outstanding achievements directly entering the market for transformation. This project-oriented mechanism not only allows students to deepen their understanding of professional knowledge through practice but also enables teaching outcomes to directly serve the development of local cultural industries, achieving the unity of educational value and social value.

3.4. Three-dimensional Coupled Closed-loop Operation Logic

AI empowerment, cultural soul-casting, and local revitalization form a mutually supportive coupled closed loop: cultural soul-casting defines the value direction for AI technology application, preventing technology from becoming a soulless tool; AI empowerment provides technical support for cultural translation and innovation, enhancing the efficiency and expressiveness of cultural activation; local revitalization offers real practical scenarios for the former two, and simultaneously verifies the effectiveness of technology application and cultural innovation through market feedback, feeding back into the optimization of teaching content. The three together constitute a complete closed loop of "cultural research - creative generation - product transformation - market feedback - teaching iteration", promoting the resonance of talent cultivation, cultural inheritance, and industrial upgrading, addressing the pain points of previous design education where technology, culture, and practice were separated. This closed-loop logic differs from the traditional one-way teaching model of "classroom input - homework output", forming a continuously iterative dynamic education system that keeps teaching closely aligned with industry needs and the pace of cultural development [5].

4. Theoretical Construction and Academic Foundation of the "Three Integrations" Educational Model

4.1. Theoretical Support from Multiple Interdisciplinary Fields

The construction of the "Three Integrations" educational model is not a mere summary at the experiential level, but is firmly grounded in multidisciplinary theories. Firstly, constructivist learning theory emphasizes learners' active construction of knowledge in authentic contexts. The "Three Integrations" educational model utilizes real local projects as a carrier, allowing students to actively integrate knowledge from multiple dimensions such as technology, culture, and market in the process of solving practical problems, thereby completing the internalization of knowledge and the generation of abilities, aligning with the constructivist learning core of "contextuality, initiative, and sociality". Secondly, embodied cognition theory posits that cognition arises from the interaction between the body and the environment. The "Three Integrations" educational model breaks down classroom boundaries, guiding students to conduct research and practice in real-life settings such as cultural and museum venues, villages, and enterprises. Through embodied experiences, students deepen their understanding of user needs and cultural connotations, avoiding the abstraction issues of pure theoretical teaching. Thirdly, service learning theory advocates for the integration of social service and curriculum

learning, deepening learning and cultivating a sense of responsibility through service. The "Three Integrations" educational model designates serving local cultural development as an important aspect of teaching, allowing students to enhance their professional abilities through service practice, while cultivating a sense of social responsibility and cultural mission, achieving the educational effect of "learning by doing and comprehending through learning".

4.2. Core Characteristics of the Model

The "three integrations" educational model possesses three distinct characteristics: Firstly, it is systematic, breaking the isolation between technology, culture, and practice, achieving deep coupling through closed-loop logic, and forming an integrated educational system, rather than a mere accumulation of scattered teaching methods. Secondly, it is practical, rooted in real teaching and industrial practices. All mechanisms and methods are derived from four years of practical exploration, possessing strong operability and capable of being directly transferred to similar teaching scenarios. Thirdly, it is value-adding, not only enhancing students' professional abilities and comprehensive qualities but also adding value to local cultural industries. Simultaneously, it promotes the iterative optimization of teaching itself, creating a win-win value-adding effect for all parties involved.

5. Practical Verification and Effectiveness of the "Three Integrations" Educational Model

The "Three Integrations" educational model has been implemented in core courses such as packaging design at Liaoning University of Communication for four years, covering six undergraduate classes and benefiting over a thousand students. Relying on local cooperation units such as the Shenyang Palace Museum, dozens of real cultural and creative projects have been carried out, and the effectiveness of education and social value have been preliminarily verified.

In terms of talent cultivation, students' comprehensive design capabilities and innovative consciousness have been significantly enhanced. Over the past four years, students have cumulatively won more than 1,000 awards in various design competitions, with the highest individual prize amounting to 32,000 yuan. The quantity and quality of awards have significantly improved compared to traditional teaching methods. Students' works are no longer limited to virtual business propositions, but more focused on themes with social value such as cultural heritage revitalization, rural revitalization, and public welfare communication, with a notable increase in market adaptability. At the same time, students' cultural identity and professional responsibility have also been significantly enhanced. Most students actively choose themes related to regional culture in their graduation projects, changing the previous tendency to pursue popular commercial design.

In the local service dimension, the model has cumulatively produced 27 sets of listed cultural and creative products, with a total sales revenue exceeding RMB 150,000. Several design schemes have been adopted by cultural and museum institutions as well as local enterprises, directly empowering the activation and industrial transformation of Liaoning's local cultural IP, and achieving positive market feedback and social benefits. In the dimension of teaching reform, the "Packaging Design" course, built upon the model, has been rated as a first-class course in Liaoning Province and promoted nationwide on the Xueyin Online platform. Relevant teaching achievements have won awards in provincial teaching innovation competitions, forming a teaching reform experience that can be widely applied.

Practice has proven that the "three integrations" educational model effectively addresses the three major dilemmas of design education in local universities. It not only responds to the challenges of the era brought about by intelligent technological transformation but also fulfills

the educational mission of cultural inheritance and local service, achieving a deep integration of professional teaching with value guidance, and talent cultivation with social service.

6. Conclusion and Prospects

The "Three Integrations Education" design education model represents a systematic exploration of design education reform in local universities in the era of intelligence. With AI empowerment, cultural soul-building, and local innovation as its three pillars, it has constructed a closed-loop coupled operating mechanism, combining a solid practical foundation with clear academic logic. This model breaks down the previous state of isolation between technology, culture, and practice in design education, achieving synergistic gains in talent cultivation, cultural inheritance, and industrial services through real project carriers. It provides a reference paradigm for the high-quality development of design education in local private universities.

Future research can be continuously deepened from two directions: First, further refine the theoretical system, combine more interdisciplinary theories to refine the mechanism of the model, conduct empirical research on parallel class comparisons on a larger scale, scientifically eliminate interfering factors, and strengthen the theoretical explanatory power and persuasive efficacy of the model. Second, expand the application scenarios, promote the migration and adaptation of the model to more design courses and regional colleges, summarize application strategies and adaptation methods in different scenarios, and expand the reach of the model. Continuously focusing on the "three-in-one" educational model, cultivate design talents with technical literacy, cultural background, and social responsibility, providing talent support and creative impetus for the high-quality development of local cultural industries.

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