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Research on a New Model of School-enterprise Collaborative Education for Visual Communication Design Major from the Perspective of Industry-Education Integration

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Abstract: Against the backdrop of rapid digital transformation and continuous industrial upgrading, the traditional educational models utilized within Visual Communication Design programs increasingly exhibit a significant disconnect from contemporary industry demands. This study systematically addresses critical pain points inherent in current school-enterprise collaborations, such as persistent institutional deficiencies, widening skill mismatches between graduates and market needs, and comprehensive evaluation failures. To resolve these systemic issues, this research explores and constructs a new, innovative model of collaborative education specifically designed from the perspective of deep industry-education integration. The research proposes a comprehensive, closed-loop talent cultivation system centered fundamentally on industry demand-driven approaches, targeted competency development, and robust institutional safeguards. By meticulously reconstructing "industry project-integrated" teaching modules, implementing an effective "dual mentorship" system involving both academic faculty and industry experts, and collaboratively establishing dedicated "Industrial Innovation Workshops," the proposed model successfully achieves the profound integration of "teaching as production and learning as creation." Furthermore, empirical evidence gathered throughout the implementation phase demonstrates that this integrated model significantly enhances students' core professional competencies, practical problem-solving abilities, and overall employment matching rates. Simultaneously, it substantially reduces the talent adaptation costs and onboarding times for participating enterprises. Ultimately, this research provides a highly scalable, sustainable, and actionable paradigm for the future cultivation of applied design talents in higher education.

Keywords: industry-education integration; visual communication design; school-enterprise collaboration; collaborative education; talent cultivation

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1. Introduction

As a core interdisciplinary discipline in the digital era, the development of Visual Communication Design is highly dependent on real-time feedback from industrial evolution and market practices. Against the backdrop of global digital transformation, the rapid iteration of emerging technologies such as artificial intelligence, virtual reality, and short video media has completely reshaped the working scenarios and skill requirements of visual communication designers. In the context of rapid digital transformation and continuous upgrading of cultural and creative industries, visual communication design has gradually shifted from traditional graphic creation to a comprehensive field integrating digital media, interactive technology, and brand operation, which makes the connection between professional education and industrial practice more urgent than ever before. The current higher education systems exhibit significant disconnects between academic instruction and industry demands: curriculum updates lag behind technological iterations, students lack practical competencies, and there exists systemic misalignment

between corporate hiring standards and educational objectives. This structural contradiction leads graduates to frequently face the dilemma of "learning for a purpose that doesn't align with their future careers," prolongs corporate recruitment cycles, increases talent adaptation costs, and results in continuous declines in school employment quality metrics. For vocational colleges focusing on applied talent training, this disconnect not only weakens the core competitiveness of majors but also deviates from the fundamental orientation of "cultivating talents for industry and serving regional economy." Industry-education integration serves as the key solution to this challenge, fundamentally requiring deep integration between educational frameworks and industrial chains rather than superficial school-enterprise collaborations.

This study focuses on the visual communication design discipline, systematically exploring innovative models of school-enterprise collaborative education. It aims to establish a closed-loop talent cultivation system rooted in industry demands, centered on competency development, and supported by sustainable mechanisms. By combining theoretical research with empirical verification, this study breaks through the traditional thinking of "school-led, enterprise-assisted" in collaborative education and explores a win-win path where both schools and enterprises participate equally and share benefits. By thoroughly analyzing practical challenges, reconstructing educational logic, and refining implementation pathways, the research drives a fundamental transformation in design talent cultivation paradigms from "knowledge transmission" to "competency generation." Grounded in real-world pain points and adopting a problem-oriented academic approach, the study ensures rigorous theoretical logic and feasible practical pathways while avoiding mechanical application of abstract standards, striving to provide actionable and scalable models for design education. In the context of the continuous evolution of the design industry ecosystem and the increasing demand for compound talents, this research has important practical value for optimizing the talent training structure of visual communication design majors and improving the matching degree between talent supply and industrial demand. In an era of accelerated digital technology iteration and profound industrial ecosystem restructuring, this model holds urgent practical significance and theoretical value for enhancing design professionals' industry adaptability, shortening talent supply-demand matching cycles, and achieving dynamic synergy between education and industry [1].

2. Current Status and Challenges of School-Enterprise Collaborative Talent Cultivation

Current industry-academia collaboration in visual communication design programs remains superficial and fragmented, failing to support high-quality educational objectives. Most cooperation stays at the level of signing strategic cooperation agreements, holding lectures, and organizing short-term internships, without forming a normalized and in-depth cooperation mechanism. The partnership model exhibits typical "one-way output" characteristics: schools organize short-term internships for students while enterprises only handle basic tasks like document organization and fundamental layout work, lacking in-depth interaction and value co-creation [2, 3]. Students are often assigned trivial auxiliary work unrelated to professional core skills, which cannot effectively improve their practical design ability. Enterprises show severe reluctance to participate, often viewing collaborations as opportunities to obtain "free labor" rather than investing resources in designing authentic projects with educational value. The lack of clear benefit distribution and risk-sharing mechanisms makes enterprises lack long-term investment motivation, and most cooperation is in a perfunctory state. Schools, constrained by rigid curricula and assessment systems, struggle to flexibly adjust course content and practical components. Fundamental misalignment exists in goal orientation: schools focus on teaching schedules and credit management, while enterprises prioritize short-term benefits and cost control, resulting in superficial and perfunctory collaborations.

The fundamental challenges manifest in three critical dimensions: First, institutional deficiencies. School-enterprise collaboration lacks institutional safeguards, relying

excessively on personal connections [4, 5]. Any leadership transition disrupts partnerships, creating a fragile ecosystem where "people leave and projects disintegrate." There is a lack of standardized cooperation contracts, clear responsibility division, and long-term mechanism construction, making the cooperation lack stability and continuity. Second, skill mismatches. Curriculum systems adhere to traditional theoretical frameworks without incorporating industry-leading competencies like AI design tools or dynamic interaction design. Popular industrial tools such as AIGC-generated design, C4D three-dimensional modeling, and short video post-production are rarely covered in the curriculum, leading to a serious gap between students' skills and enterprise job requirements. Faculty predominantly hold academic credentials lacking real-world project experience, rendering them ineffective in guiding students through complex practical challenges, resulting in significant skill gaps upon entering the workforce. Third, evaluation failures. Collaborative outcomes are measured through simplistic metrics like "intern participation rates" and "corporate feedback forms," neglecting student competency development and industrial value creation. The evaluation ignores core indicators such as students' practical operation ability, creative design level, and project landing effect, and cannot truly reflect the quality of collaborative education. For instance, design task completion is assessed solely by "task fulfillment rates," omitting critical skill cultivation such as creative optimization and user insight analysis. This leads to low corporate satisfaction and unsustainable partnerships. These challenges reinforce each other in a vicious cycle: schools avoid deep collaboration due to lack of incentives, enterprises reduce investments expecting minimal returns, and students' skill development pathways become obstructed. Coordinated education remains inefficient, with graduate employment rates persistently low and companies citing "weak practical skills" as core pain points. Without resolving systemic bottlenecks, industry-education integration will remain conceptual rather than delivering tangible educational outcomes.

3. Construction of New Models from the Perspective of Industry-Education Integration

Through systematic reflection on current realities, this study proposes a new school-enterprise collaborative education model guided by the principles of "industry demand-driven approaches, competency-focused development, and collaborative mechanism safeguards." This model takes the actual needs of enterprises as the starting point, focuses on improving students' professional core competencies as the goal, and uses standardized institutional mechanisms as the guarantee to realize the deep integration of education and industry [2, 6]. This model transcends the superficial limitations of traditional school-enterprise partnerships by establishing an integrated educational ecosystem encompassing "industry needs, capability cultivation, and institutional support." Its core innovation lies in systematically transforming real-world corporate projects into teaching resources, achieving seamless alignment between learning processes and industrial workflows to realize the profound integration of "teaching as production, learning as creation." "Teaching as production" means that teaching content is derived from industrial production practice, and the teaching process is synchronized with industrial workflows; "learning as creation" means that students complete learning tasks through creative design and project practice, transforming knowledge into practical creation ability. The curriculum framework is restructured into "industry project-integrated" teaching modules, with content jointly developed by educational institutions and enterprises.

Enterprises propose authentic project requirements with educational value (such as brand upgrades or short video planning), enabling schools to design teaching modules that expose students to cutting-edge industry challenges. Schools and enterprises jointly sort out project knowledge points, skill points, and assessment points, integrating them into the teaching process to ensure that teaching is closely linked to industrial practice. For instance, the "Digital Brand Design" course uses real-world product launch projects as case studies, requiring students to complete the entire process from market research and user persona development to solution design and iterative optimization [7, 8]. Course

evaluations are dynamically assessed based on corporate feedback and user test data, overcoming the limitations of "mock exam-style" teaching. This evaluation method breaks the single teacher evaluation model and realizes the multi-subject evaluation of "school teachers + enterprise mentors + users." The faculty implements a "dual mentorship system" where university instructors focus on knowledge framework structuring and instructional design, while industry experts lead practical project guidance. School teachers are responsible for the teaching of basic theories and professional knowledge, while enterprise mentors are responsible for the explanation of industrial standards, project operation norms, and practical skills, forming a complementary teaching team. Regular "teaching workshops" facilitate in-depth discussions on industry trends and pedagogical challenges, fostering a two-way exchange of knowledge systems and practical experience.

The teaching faculty has evolved from one-way "knowledge providers" into a collaborative community with complementary competencies, effectively addressing the dual challenges of theoretical knowledge and disconnection from practical teaching. This transformation not only improves the practical teaching ability of school teachers but also enables enterprise mentors to integrate industrial experience into teaching, realizing the mutual growth of both sides. The practice platform collaboratively established the "Industrial Innovation Workshop," integrating teaching, R&D, and incubation functions: enterprises provide authentic project libraries for student selection, while schools offer venue and infrastructure support, with both parties jointly establishing operational guidelines. The workshop is managed by both schools and enterprises, with a clear division of labor in daily operation, project docking, and achievement transformation. Students work in teams within the workshop to undertake projects, completing the full lifecycle from conceptualization and design to implementation. The workshop implements a "project credit system," where students accumulate credits through high-quality project completion, and enterprises provide "project subsidies" based on outcome quality—solving sustainability issues in resource allocation while fostering professional accountability and value recognition among students. A notable case demonstrates that a dynamic tour navigation system designed by student teams for local cultural tourism projects was adopted by enterprises and put into operation, with students simultaneously earning practical credits and project bonuses.

The essence of this model lies in organically integrating industrial processes into the education system, forming an internally unified whole of "teaching, learning, and doing," thereby avoiding reliance on external policies [9]. It integrates the industrial production chain, talent training chain, and professional education chain into one, so that collaborative education can operate independently and continuously without excessive dependence on external factors. Through mechanisms jointly designed by schools and enterprises, it facilitates the natural occurrence and continuous deepening of collaboration, ultimately achieving organic integration of education and industry.

Specific Implementation Pathways for the New Model:

The implementation of the new model must adhere to a systematic closed-loop process of "research-design-operation-optimization." The pathway design emphasizes practicality and gradual progression to ensure a smooth transition from pilot projects to widespread adoption, thereby avoiding risks of idealization and "one-size-fits-all" approaches.

To accurately align with industry demands, comprehensive market research must be conducted prior to implementation to avoid isolated design approaches. The university collaborated with industry associations to select representative enterprises spanning advertising, e-commerce, and cultural innovation sectors. Through structured interviews and job competency analyses, key focus areas included enterprises' current high-frequency tool usage, projected technological trends over the next three years, and project collaboration willingness. The research employed a hybrid approach combining semi-open interviews and questionnaire surveys to ensure data reliability and validity. For instance, systematic surveys revealed that design firms urgently require integrated skills

in "short video scriptwriting and visual design," a gap unaddressed by existing curricula. This led to curriculum adjustments including the introduction of a "short video creative design" module. The research outcomes were compiled into the "Visual Communication Design Industry Competency Requirements List," serving as the foundation for curriculum restructuring and dynamic updates. Although this phase required 2-3 months of resource investment, it ensured content alignment with industry needs, fundamentally preventing resource misallocation.

The establishment of a sustainable cooperation framework fundamentally requires creating an institutionalized "school-enterprise co-governance" system to eliminate reliance on personal relationships. A "School-Enterprise Collaborative Education Committee" should be formed, comprising school administrators, corporate executives, key faculty representatives, and student delegates [9]. This committee will establish quarterly meetings to systematically review project portfolios, allocate resources, and evaluate collaboration outcomes. Key mechanisms include: Project eligibility criteria—enterprises must submit projects aligned with educational objectives and student competency development requirements, which undergo technical review by the committee before being incorporated into curricula; Resource allocation mechanism—enterprises provide funding and technical guidance while schools offer facilities, teaching management support, and faculty resources, with cost-sharing based on project complexity and value; Outcome sharing mechanism—student project achievements are jointly owned by both parties, with enterprises retaining priority access rights while schools utilize them for teaching case library development and curriculum iteration. For example, in one collaboration, an enterprise invested dedicated funds while the school provided a 100-square-meter workshop space. Both parties agreed on priority access rights and teaching copyright ownership, effectively ensuring sustained corporate investment incentives and institutional safeguards for school implementation.

Project-driven classroom practices center curriculum implementation around "real-world projects." At the beginning of each semester, the committee releases an audited project repository containing 5-8 authentic corporate requirements, which students freely form teams to undertake. Classroom activities strictly follow a three-phase framework: problem introduction, collaborative solution development, and outcome delivery. During the problem introduction phase, corporate experts visit campuses to explain project backgrounds and core challenges, while students conduct group requirement research. In the solution development phase, faculty members guide theoretical knowledge application alongside on-site optimization coaching from industry mentors, resulting in actionable preliminary drafts. The outcome delivery phase features student pitch presentations with on-site corporate evaluations, where outstanding proposals directly enter enterprise development processes. Teachers transition from knowledge instructors to learning collaborators, focusing on guiding students to apply knowledge to solve real-world problems. A typical case study demonstrates how the "E-commerce Visual Optimization" project required students to analyze user click heatmaps and design multi-version main image solutions. Corporate feedback confirmed the proposals' precise alignment with young users' preferences, leading to immediate adoption. Classroom dynamics evolve from "teacher lecturing, students listening" to an interactive model of "enterprise-proposed challenges, student solutions, and collaborative evaluations," achieving simultaneous problem resolution and skill development.

Data-driven continuous improvement establishes a multi-dimensional, quantifiable evaluation system that transcends superficial metrics like "satisfaction." The assessment framework encompasses three dimensions: Student competency metrics measured through project outcome quality (e.g., user test scores) and skill mastery (e.g., proficiency in AIGC tool applications); Corporate value metrics evaluating practical implementation rates and cost-saving benefits (e.g., reduced outsourcing expenses); and Institutional performance metrics tracking curriculum update frequency, employment relevance rates, and corporate partnership renewal rates. At semester-end, the committee compiles data into the "Collaborative Education Improvement Report" for mechanism optimization. For

instance, when evaluations reveal only 50% compliance in "user research capabilities," targeted practical modules on "user behavior analysis" are introduced the following semester. Assessment results directly drive mechanism refinement, creating a dynamic "implementation-feedback-optimization" closed-loop cycle [10]. The implementation strategy adheres to the "small steps, rapid progress" principle: initial pilot programs in 1-2 specialized classes are conducted to validate effectiveness before gradual university-wide rollout, ensuring operational feasibility and avoiding premature implementation failures.

4. Case Studies and Effectiveness Evaluation

Taking a pilot project launched in 2022 by the Visual Communication Design program at a provincial university as an example, the initiative established "Industry Innovation Workshops" with five local design firms, engaging 120 students across three academic years. Focusing on the "Digital Transformation of Cultural Tourism Brands" domain, enterprises identified key requirements: developing dynamic navigation systems for rural scenic areas and creating culturally distinctive IP characters. During the requirement alignment phase, companies specified that the "Rural Tourism Navigation System" project must integrate AR technology with local cultural elements. In the curriculum restructuring phase, the university introduced a "Digital Cultural Tourism Design" course, breaking down the project into three modules: "Cultural Symbol Identification," "Visitor Behavior Analysis," and "AR Interaction Design." During implementation, students conducted field observations and in-depth interviews at tourist sites, developing AR navigation prototypes while receiving weekly technical guidance from corporate experts. The final deliverables were adopted by the enterprise and implemented at the scenic area, resulting in a 20% increase in average visitor dwell time.

The effectiveness evaluation through multi-dimensional data tracking revealed significant improvements in student capabilities, with compliance rates in core competency indicators such as "user research depth" and "AR technology application" increasing by 40% compared to traditional models. Corporate value was tangibly realized, as the project reduced design outsourcing costs by approximately 150,000 yuan and extended average tourist dwell time at scenic spots by 20% after system implementation. School development continued to optimize, with employment relevance rates rising from 55% to 82%, corporate recruitment demand increasing by 40%, and partner enterprises expanding from 5 to 12. Key success factors included enterprises shifting from "passive compliance" to "active engagement" (as the project directly generated commercial value through system improvements in visitor experience), while students transitioned from "formal task completion" to "value creation," demonstrating significantly enhanced learning motivation. Student interview feedback highlighted: "Previously, completing assignments was merely perfunctory. Now that our solutions are adopted and implemented by enterprises, we genuinely perceive the practical value of knowledge application, leading to substantial boosts in learning motivation and professional identity." This case study empirically validates the feasibility and effectiveness of the new model, demonstrating that school-enterprise collaborative education can achieve a triple-win scenario: talent capability enhancement, corporate value creation, and institutional development gains [11, 12].

5. Conclusion

From theoretical exploration to practical validation, the collaborative education model for Visual Communication Design programs under industry-academia integration has demonstrated its effectiveness. Centered on industrial demands, this approach transforms teaching into dynamic competency development, achieving deep collaboration characterized by aligned interests, shared skill cultivation, and mutual benefit outcomes. The model addresses the challenges of shallow cooperation in the past and builds a sustainable collaborative education ecosystem. By overcoming traditional

superficial and fragmented partnerships, the model establishes sustainable educational ecosystems through three key mechanisms: curriculum restructuring, faculty collaboration, and platform co-construction. Empirical data reveals significant improvements in students' core competencies, corporate partnership satisfaction, and graduate employment quality, providing actionable pathways for design education transformation. Future developments should focus on two dimensions: technological empowerment (integrating AI design tools and VR/AR platforms to enhance efficiency and innovation) and regional synergy (establishing Design Industry Collaboration Alliances to share project repositories and evaluation standards, creating resource-efficient cluster effects). Technological empowerment can keep the curriculum synchronized with industrial technological iteration, and regional synergy can realize the optimal allocation of resources between schools and enterprises in the region. Caution is warranted against superficial formalism, with continuous reinforcement of data-driven evaluation systems. This study highlights actionable implementation principles that reveal the essence of industry-academia integration: a collaborative philosophy where enterprises address real-world challenges alongside educational institutions. When businesses invest authentic resources and students deliver measurable outcomes, the boundaries between academia and industry naturally dissolve, leading to organic quality enhancement. Beyond design disciplines, this model offers transferable frameworks for applied programs, facilitating deep educational-industrial integration and dynamic alignment between talent development and societal needs, thereby supporting innovation strategies through robust talent cultivation.

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