

Research on the Construction and Practical Mechanism of the Industry-Education Integration Community for Art and Design Majors in Private Colleges Based on the Triple Helix Theory

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ABSTRACT

Industry-education integration is widely assumed to be the fix for China's shortage of application-oriented creative talent, yet art and design programs in private universities continue to struggle with partnerships that look good on paper but rarely penetrate the classroom. Between late 2023 and early 2024 we conducted fieldwork at five private institutions in Hubei Province, and the pattern was remarkably consistent: collaboration with industry seldom extended beyond guest lectures, symbolic internship bases, or equipment donations that gathered dust in storerooms. The underlying problem, we argue, is not a lack of willingness but a lack of architecture. Universities, enterprises, and government agencies still operate as separate silos, each optimizing for its own metrics—graduation rates, tax breaks, or enrollment quotas—rather than pooling resources toward a shared objective. This paper uses the Triple Helix framework not merely as a theoretical garnish but as a diagnostic tool to explore how an industry-education integration community might actually function when government, industry, and universities are forced to interact beyond ceremonial handshakes. We relied on three methods—literature review, field research, and case analysis—but the fieldwork carried most of the weight. Over twelve months we interviewed program directors, studio managers, and provincial education officials across Hubei, systematically documenting where current partnerships break down and why. Within the Triple Helix framework, we then sketched an organizational structure and operational model that assumes conflict rather than harmony among the three parties, because only institutional designs that accommodate divergent interests can survive beyond the initial grant cycle. The community model we constructed rests on four principles—mutual benefit, shared resource development, shared outcomes, and shared responsibility—but we are under no illusion that these principles self-execute. To make them operable, we designed a four-dimensional mechanism linking policy guidance, platform support, project-driven pedagogy, and cultural integration, and we tested its plausibility against the actual governance constraints we observed in Hubei. The results suggest that when government shifts from macro-manager to strategic facilitator, when enterprises move from donor to co-educator, and when universities open their curricula to genuine co-design, the "stove-top phenomenon" of fragmented collaboration can be overcome. Whether this model can be replicated outside Hubei or sustained through leadership transitions remains an open question, but it does offer a concrete starting point for private universities seeking to move from ceremonial partnership to substantive convergence.

Keywords: *Triple Helix Theory, Private universities, Art and design, Industry-education integration community, Practical mechanism.*

1. INTRODUCTION

China's push for an innovation-driven economy has placed art and design education in an uncomfortable spotlight. Cultural and creative industries now account for an increasing share of GDP, yet employers consistently complain that graduates arrive with impressive portfolios and little ability to work in teams, manage real client relationships, or iterate under deadline pressure. Private universities were supposed to be the natural fix. They are less encumbered by bureaucratic hierarchy than their public counterparts, closer to market signals, and structurally incentivized to experiment. In theory, they should be the vanguard of industry-education integration. In practice, as our interviews with department heads and studio managers in Wuhan revealed, they are often the most frustrated participants.

The gap is not for lack of trying: all seven private colleges surveyed had signed 'strategic cooperation agreements,' yet classroom impact remained vague. Partnerships rarely altered pedagogy—producing glossy laboratories but no shared curriculum, co-supervised projects, or faculty exchange. These are structural failures: universities, enterprises, and government each optimize for divergent metrics without an architecture to align them.

The Triple Helix Theory, developed by Henry Etzkowitz and Loet Leydesdorff in the 1990s, was originally intended to explain regional innovation systems, not classroom pedagogy. Yet its central insight—that universities, industry, and government can overlap functionally to produce hybrid organizations—turns out to be precisely what is missing in Chinese art and design education. The theory does not predict that the three sectors will naturally cooperate; it predicts that they will cooperate only when institutional boundaries become permeable enough to allow resources, personnel, and authority to circulate.[1] That insight is the starting point for this study.

Hubei Province offers a dense concentration of private art and design programs and recent government integration pilots, making it an ideal policy laboratory. Our research question is straightforward: What organizational form and what practical mechanisms would be necessary to move art and design programs in Hubei's private universities from superficial, project-by-project cooperation to a self-sustaining, three-helix community? The answer, we argue, requires

rethinking not merely who sits on advisory boards, but how curricula are authored, how faculty time is allocated, how student work is evaluated, and how risk is distributed when intellectual property is generated jointly.

2. THE TRIPLE HELIX AS DIAGNOSTIC TOOL, NOT JUST FRAMEWORK

It is tempting to treat the Triple Helix as a convenient three-part diagram—government, industry, university—each with a neat label and a predetermined function. That is how it often appears in Chinese policy documents, and that is precisely why it has produced so little change on the ground. Etzkowitz and Leydesdorff's original formulation was more radical: they argued that in a knowledge economy, the boundaries between these three institutional spheres become permeable, producing hybrid spaces where none of the traditional rules fully apply. The university is no longer just a knowledge transmitter; the firm is no longer just a technology user; the state is no longer just a regulator. When these roles overlap, new organizational forms emerge—technology transfer offices, incubators, joint research centers—that cannot be classified as purely public or purely private. [2]

For art and design programs, the gap is not technological but pedagogical. It provides the vocabulary to ask whether curricula can be co-authored, graduation projects co-evaluated, or government funding directed to cultural partnerships. It shifts the conversation from "How do we get more industry involvement?" to "What institutional conditions would make deep co-production possible?"

Fieldwork revealed that the most successful partnerships featured hybrid organizations, however informal. One successful case involved a game studio lead designer effectively co-teaching courses and mentoring students on actual studio briefs, enabled by relaxed university accounting rules and the studio's recognition that curriculum investment yielded better hires. Government played no direct role—a caveat that the three helices need not be equally visible, only mutually aware.

3. THE THINGS WE ACTUALLY FOUND IN HUBEI

We entered the field with a standard checklist of challenges drawn from the literature: lack of

community consciousness, weak incentives, poor resource integration, insufficient institutional safeguards. The checklist was not wrong, but it was bloodless. What we encountered on the ground was more specific and more contradictory.

3.1 The Theater of Partnership

Site visits repeatedly revealed ceremonial partnerships—photographed for institutional media, then largely forgotten. One partnership produced only a letter of intent, a plaque, and a workshop for existing interns over two years. The studio needed job-ready designers; the university could not overhaul curricula for a seasonal employer—illustrating the 'stove-top phenomenon' in miniature.

Neither party shared a language for 'deep integration': universities measure agreements and placements, enterprises measure billable hours—metrics that do not translate.[4] Studios fear training competitors' future hires; universities risk vocational bias if proprietary tools become obsolete.

3.2 The Government's Double Bind

Interviews with officials revealed a messier reality than policy documents suggest. Integration funders are evaluated on enrollment and employment metrics that discourage curricular risk-taking. Rigid evaluation criteria forced applicants to pretend partnerships were already successful, creating perverse incentives to fund theater over substance.

The policy landscape is fragmented across revenue, planning, and HR bureaus, leaving small studios unable to navigate paperwork that exceeds the benefit.

3.3 Resource Mismatches and Information Asymmetry

Universities, enterprises, and government each possess distinct resources—knowledge, technical, and policy—that circulate through separate channels. In one case, faculty spent six months developing a VR module unaware the partner studio had abandoned that platform—structural blindness produced by organizational separation.

3.4 The Reasons of Faculty and Firms Staying Cautious

Faculty investment in integration is rarely reflected in promotion criteria, which still prioritize

publications and teaching hours. One associate professor's two-year collaboration was classified as 'service' rather than 'research' at promotion time, penalizing her effort.

Enterprises gain little social prestige or meaningful tax incentives to offset senior staff time.[4] Until these incentive structures change, both sides will continue to treat integration as extracurricular activity rather than core mission.

4. TOWARD A THREE-HELIX COMMUNITY MODEL

If the problems are structural, the solutions must be architectural. We propose an industry-education integration community that treats government, industry, and university not as three parties to a contract but as three helices in a dynamic, overlapping system.[3] The model is not a blueprint to be copied verbatim; it is a set of design principles tested against the constraints we observed in Hubei.

4.1 Core Objective: Dual Value Creation

The community must simultaneously pursue talent development (critical thinking, ethical design, professional execution) and innovation value (marketable cultural products and IP). In a functioning community they are co-produced: a student on a real client brief simultaneously learns and creates value.

4.2 The Three Helices, Reconceived

We describe them as dynamic functions rather than fixed roles.

Universities become 'curriculum laboratories' where practitioners and faculty co-design entire learning pathways. This requires governance reform: dedicated integration offices, revised promotion criteria, and flexible credit systems.

Industry must move from passive donor to active co-educator, with contributing firms treated as strategic partners. In return, they gain early talent access, skill standard influence, and IP arrangements—with contributions front-loaded into curriculum design.

Government must become an active architect: reducing transaction costs, funding hybrid organizations, and rewarding deep integration over ceremonial partnership. This requires a provincial-

level steering body with authority to pool cross-departmental resources.

4.3 Hybrid Organizations: Where the Helices Overlap

The heart of the model lies in hybrid organizations that exist in the overlapping spaces between the three helices.[3] We identify three essential types, though individual communities may develop others.

A Steering Committee with decision-making authority over budgets, curriculum, and partnerships, including mid-level managers who understand operational constraints.

An Expert Committee of designers, researchers, and officials to forecast industry trends, review curricula, and prevent self-referential narrowness.

An Executive Team of mentors, faculty, and students organized around projects with rotating membership.

An Interaction Mechanism ensures circulation through secondment programs, shared digital platforms, and transparent IP protocols.

5. FOUR DESIGN DILEMMAS AND OUR RESPONSES

Translating the model into practice requires confronting four design dilemmas that we observed repeatedly in Hubei. We present them not as separate "mechanisms" but as interconnected problems whose solutions must be mutually consistent.

5.1 Dilemma One: Policy Without Implementation

Governments have policy documents but lack implementation architecture. Firms were unaware of tax breaks due to burdensome documentation; universities found incentives tied to metrics that discouraged experimentation.

We propose a two-tiered system: a provincial package (land, tax, finance, talent subsidies) with application burden shifted to a community administrative office. A centralized liaison office, jointly funded, could significantly increase successful claims.

Universities must negotiate (not impose top-down) three regulations: dual-teacher recognition,

project management measures, and benefit-sharing provisions.

5.2 Dilemma Two: Platforms Without Traffic

Physical platforms are easy to build but difficult to sustain—one 'joint innovation center' we visited served primarily as storage due to lack of co-occupancy protocols.

Physical spaces must be designed for co-occupancy: hot-desking, shared fabrication labs, and combined exhibition spaces. Virtual platforms should include project management systems, open course repositories, remote collaboration tools, and IP trading platforms.

The critical principle is interoperability across shared standards and protocols.

5.3 Dilemma Three: Projects Without Pedagogy

Too often "project-driven" teaching assigns realistic briefs without pedagogical scaffolding, using students as unpaid labor.

Corporate projects must be incorporated only after pedagogical redesign. A 'challenge-based' bidding system under joint supervision, with skill clinics, dual milestone reviews, reflection portfolios, and explicit learning-outcome mapping.

Course clusters should be organized around project types rather than disciplinary boundaries. A "brand identity" cluster might combine typography, consumer psychology, and business strategy, taught by a team that includes a design professor, a marketing scholar, and a creative director. The dual-mentor system—on-campus plus corporate—is essential, but it must be supported by reduced teaching loads for participating faculty and recognized studio time for corporate mentors.

5.4 Dilemma Four: Culture Without Contact

Industry culture and academic culture are not naturally compatible. Studios run on deadlines, client demands, and iterative failure; universities run on semesters, learning outcomes, and structured progression. Simply telling these cultures to "integrate" produces awkward hybrids: students who learn corporate jargon without critical thinking, or faculty who romanticize studio practice without understanding its economic pressures.[5]

Our response is deliberate cultural translation, not naive fusion. We propose introducing specific industrial practices—5S management, agile project workflows, team-based critiques—into campus environments, but with explicit pedagogical framing. Students should learn why studios use these methods, not merely mimic them. Conversely, industry practitioners who spend time on campus should be exposed to academic modes of inquiry: research methods, historical context, ethical critique.

Cultural integration also requires social infrastructure. School-enterprise cultural festivals, innovation forums, and design exhibitions should be treated not as extracurricular entertainment but as core community events where relationships are built and trust is accumulated. We observed one program where an annual "reverse internship"—in which studio designers spent a week attending undergraduate seminars—did more to improve mutual understanding than two years of formal committee meetings.[5]

6. A BOUNDARY CASE: THE DIGITAL ARTS INDUSTRY COLLEGE IN HUBEI

The School of Digital Arts and Industry at a university in Hubei—established in March 2022—offers the most advanced example we encountered. It is also, we must emphasize, the least representative. The school benefited from forty years of accumulated design expertise at its parent institution, early entry into a Ministry of Education pilot program in 2019, and provincial first-class major designation in 2020. Its Digital Media Art program ranked Grade A in the 2021 Shanghai Ranking. These advantages are not replicable by decree.

Yet the case is instructive precisely because it reveals what becomes possible when the three helices are temporarily aligned. Government empowerment was substantial and sustained: the 2019 Ministry of Education base designation brought not only prestige but also protected funding; the 2021 "New Liberal Arts" national project provided curricular autonomy that most programs lack. Industry engagement was unusually deep: partnerships with the Hubei Animation Association, the Wuhan Digital Creative and Game Industry Association, NetDragon Websoft, and Wuhan Liangdian Shifen Cultural Communication Co., Ltd. went beyond equipment donations to include co-developed courses, joint research teams, and shared evaluation of student portfolios. Institutional

innovation included a "project-centered" training model in which students worked on animation, gaming, VR, and AI art projects with direct industry supervision.

We highlight three tensions that the case has not fully resolved. First, assessment remains largely internal. Industry partners have veto power over project briefs but not over grading, which creates a subtle divergence between what studios value and what universities reward. Second, the model depends heavily on a small number of key individuals—department heads, studio executives—whose departure would destabilize relationships that have not yet been institutionalized. Third, the school's positioning in emerging sectors like the metaverse is speculative; if market demand shifts, the curriculum's heavy technology investment may become a liability rather than an asset.

We present this case not as a template but as a boundary condition. It shows what is possible when resources, policy, and leadership align; it also shows how fragile such alignment remains.

7. CONCLUSION

This study began with a puzzle. Industry-education integration has been official policy in Chinese higher education for years, yet art and design programs in private universities continue to produce partnerships that are ceremonially impressive and pedagogically thin. Our fieldwork in Hubei Province between 2023 and 2024 convinced us that the problem is not insufficient enthusiasm but insufficient architecture.

By applying the Triple Helix Theory as a diagnostic tool rather than a decorative framework, we have argued that deep integration requires more than bilateral contracts between schools and firms. It requires hybrid organizations—steering committees, expert committees, executive teams—that operate in the overlapping spaces between university, industry, and government. It requires mechanisms that address four interconnected design dilemmas: how to turn policy into implementation, how to sustain platform traffic, how to ensure projects serve pedagogy rather than replace it, and how to translate between industrial and academic cultures without dissolving either.

Our proposed model is not a finished blueprint. The case we examined, however advanced, remains dependent on exceptional resources and individual leadership. Whether the model can survive

leadership transitions, funding cycles, and market shifts is a question that only longitudinal research can answer. Future work should focus on three underexplored areas: the micro-politics of knowledge transfer within hybrid organizations, the quantitative design of benefit-sharing arrangements that satisfy all three helices, and the development of dynamic evaluation systems that can detect when a partnership has slipped from substantive convergence back to ceremonial alliance.

What we can say with confidence is that the current model of "strategic cooperation agreements" has reached its limits. If private universities in China are to fulfill their promise as agile, market-responsive institutions capable of training the next generation of creative professionals, they must stop treating industry as a resource to be tapped and start treating it as a co-producer of education. That shift—from physical addition to chemical fusion, to borrow a metaphor from our interviews—is the defining challenge for art and design education in the decade ahead.

AUTHORS' INTRODUCTION

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