A Practical Framework for Building Interdisciplinary Communities in Business Education under China's New Liberal Arts Initiative

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Abstract: This study constructs an Interdisciplinary Communities (ICs) framework to resolve structural tensions in China's New Liberal Arts Initiative, where institutional barriers and curricular fragmentation impede interdisciplinary education. Grounded in problem-oriented design, ICs integrate organizational synergy, knowledge fusion, motivation mechanisms, and quality feedback. Empirical analysis of a FinTech case demonstrates ICs' bidirectional governance adaptability resilience: employer-driven curricular optimization internally, and alignment with national strategies like China's Education Modernization 2035 externally. While effectively bridging top-down centrally designed frameworks and grassroots implementation, challenges persist in reconciling utilitarian-humanistic epistemic conflicts. We prescribe context-sensitive strategies—negotiation workshops and governance frameworks—to institutionalize ICs. The model contributes to global theory by adapting community paradigms to bureaucratic academic systems, offering scalable solutions for emerging economies.
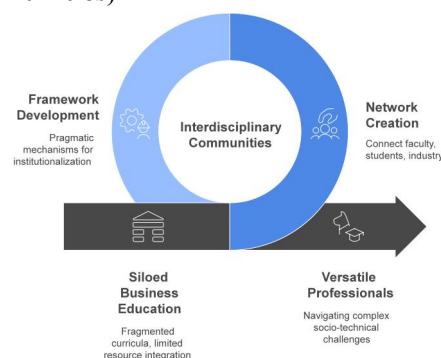
Keywords: Interdisciplinary Communities; New Liberal Arts; Chinese Higher Education; Epistemic Negotiation

1. Introduction

1.1 Context and Systemic Constraints

China's New Liberal Arts Initiative, introduced by the Ministry of Education in 2020, mandates the cultivation of interdisciplinary business talent capable of navigating the convergence of digital technologies and humanistic perspectives. Nevertheless, traditional business education remains constrained by three entrenched systemic limitations. Structural fragmentation manifests through disciplinary silos impeding cross-faculty resource integration, exemplified by segregated budgets preventing collaborative FinTech laboratory development between business schools and computer science departments. Epistemic discontinuity is reflected in fragmented curricula where subjects such as AI ethics and algorithmic finance are taught in isolation, failing to synthesize knowledge domains spanning technical, commercial, and humanistic disciplines. Motivational misalignment stems from discipline-bound incentive structures, particularly promotion review criteria prioritizing single-discipline publications, which actively discourage collaborative pedagogical design. These constraints obstruct the development of versatile professionals equipped to address socio-technical challenges including blockchain governance and algorithmic accountability, thereby undermining the strategic objectives of the New Liberal Arts Initiative (e.g., **Figure 1. Implementing Interdisciplinary Communities**).

Figure 1. Implementing Interdisciplinary Communities

1.2 Proposed Framework and Scholarly Contribution

This study advances Interdisciplinary Communities as an institutional mechanism to

resolve these systemic constraints. These structurally embedded networks integrate faculty, students, and industry stakeholders. We architect a pragmatic framework operationalized through four executable mechanisms: Organizational Synergy is achieved through cross-school task forces endowed with resource allocation authority; Knowledge Fusion is realized via modular course clusters co-developed with industry partners; Motivation Sustenance incorporates interdisciplinary performance metrics within promotion reviews; Quality Feedback utilizes competency portfolios triangulating employer evaluations. By bridging theoretical discourse on educational communities with actionable institutional design, this research addresses a critical lacuna within New Liberal Arts implementation scholarship. Its core contribution resides in developing a governance-ecologically embedded model that reconciles top-down reform directives with grassroots execution realities. This model furnishes transferable institutional blueprints for academic systems characterized by bureaucratic organization.

2. Literature Review

2.1 Theoretical Evolution and Practical Dilemmas of Interdisciplinary Education

Existing research has reached a consensus on the core value of Interdisciplinary Education: to foster knowledge innovation and cultivate students' ability to solve complex problems by breaking down disciplinary barriers. However, multiple dilemmas persist in practice. At the organizational level, the "collegiate system" in higher education institutions leads to fragmented resources, causing interdisciplinary programs to often become "institutional enclaves" due to administrative barriers [1]. At the curriculum design level, "curriculum fragmentation" [2] is widespread, lacking a coherent logic for knowledge integration[3]. At the faculty incentive level, traditional academic evaluation systems suppress motivations for interdisciplinary collaboration, particularly in Chinese universities[4]. Current literature predominantly focuses on macro-level theories or isolated mechanisms, failing to provide an integrated operational framework that synthesizes "organization-curriculum-incentive-feedback" dimensions. Moreover, it neglects the imperative for governance-contextual adaptation, which

represents the fundamental lacuna this study resolves.

2.2 New Liberal Arts Initiative and Interdisciplinary Pathways with Chinese Characteristics

China's New Liberal Arts Initiative (Ministry of Education, 2020) emphasizes cultivating interdisciplinary talent through the "integration of arts and sciences with industry and education." Scholarly inquiries manifest dual trajectories: reform-analytical studies elucidate the value-reconstructing function of the New Liberal Arts[5], highlighting technology empowerment ,e.g., AI + economics/management as essential[6]; institutional-practical studies summarize experiences from pioneering universities ,e.g., "micro-programs" [7], yet remain largely descriptive and fail to extract universal mechanisms. A critical lacuna persists in the unresolved dialectic between centrally orchestrated frameworks and institutional execution[8], imperatively necessitating a contextually embedded mechanism to reconcile this structural-systemic fissure.

2.3 Community Model: A New Paradigm for Interdisciplinary Collaboration

The concept of "Community" introduced into education[9] has evolved into a novel paradigm for interdisciplinary organization. International practices, such as MIT Media Lab's "anti-disciplinary" communities, drive innovation through radical collaboration. Chinese explorations, like Zhejiang University's "Digital Social Sciences Platform," integrate multidisciplinary teams but face scalability constraints due to resource dependencies. Theoretical advances indicate that communities reduce collaboration costs through shared epistemology, yet their adaptability within China's bureaucratic university systems remains unverified.

Consequently, this study positions 'Interdisciplinary Communities (ICs)' [10] as the central apparatus to operationalize the New Liberal Arts reform initiative (e.g., **Figure 2. Interdisciplinary Education Framework**). Its breakthrough lies in synthesizing the globally advanced Community theory with China's unique institutional context, aiming to formulate a pragmatic model that systematically interlinks structural organization, operational mechanisms,

and governance ecology." This approach addresses the literature's gap in systematically implementing localized interdisciplinary education.
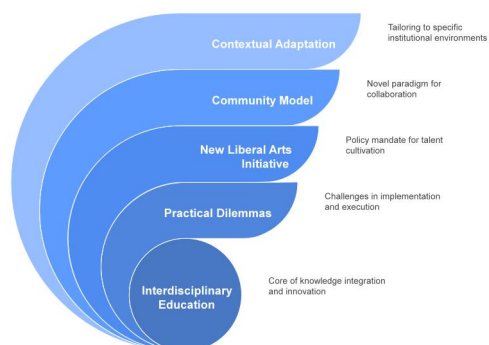
Figure 2. Interdisciplinary Education Framework

3. Mechanism Design

3.1 Design Logic and Principles

The design of the Interdisciplinary Communities (ICs) mechanism is grounded in resolving structural contradictions inherent in the New Liberal Arts Initiative. Its problem-oriented core logic addresses three critical challenges: constructing a cross-hierarchical collaborative network to overcome organizational barriers that impede resource integration; reshaping knowledge fusion carriers to mitigate curriculum fragmentation causing intellectual disjunction; and innovating institutional incentive models to counter motivational bottlenecks stemming from disciplinary parochialism. The framework adheres to a dual-drive principle, ensuring deep alignment with the Ministry of Education's mandate for dismantling disciplinary barriers while synchronizing with national strategies. Simultaneously, it remains rooted in Chinese higher education reform practices by extracting replicable elements from exemplary cases—such as the dual-supervision system originating from

FinTech programs' demand for interdisciplinary faculty, and industry-academia alliances responding to industry-education integration trends. This dual orientation cultivates the framework's governance adaptability and operational viability, thus establishing robust foundations for institutionalization.

3.2 Core Mechanisms and Element Implementation

Four structurally integrated mechanisms enable the efficient operation of Interdisciplinary Communities (e.g., **Table 1. Core Mechanisms and Element Implementation**). The organizational synergy mechanism employs cross-school task forces with budget/resource authority and industry-academia alliances involving corporate participation in curriculum development and training bases, with alliances required to provide at least two authentic project cases. The knowledge integration mechanism centers on modular course clusters restructured across three tiers (technical application, business logic, and humanities/ethics)—exemplified by blockchain finance courses co-developed by business professors and technical experts—and a dual-supervision system mandating joint supervision contracts between disciplinary mentors. The motivation sustenance mechanism leverages interdisciplinary performance evaluation integrated into promotion criteria (including co-teaching and competition guidance) and a faculty development fund prioritizing research in convergent fields like commercial AI. The quality feedback mechanism utilizes student competency portfolios incorporating third-party certifications (e.g., CFA) and an employer evaluation system where ratings carrying $\geq 30\%$ weight directly trigger course iterations. All elements feature quantifiable implementation standards to ensure operational rigor.

Table 1. Core Mechanisms and Element Implementation

Mechanism	Key Components	Function
Organizational Coordination	Cross-school taskforces, Industry-academy alliances	Break administrative barriers, allocate resources
Knowledge Integration	Modular course clusters, Dual-supervisor system	Fuse business/tech/humanities knowledge
Incentive Sustainability	Interdisciplinary performance metrics, Faculty development funds	Motivate sustained collaboration
Quality Feedback	Student competency portfolios, Employer evaluation systems	Enable dynamic curriculum optimization

3.3 Mechanism Synergy and Governance Integration

Systemic synergy across the four mechanisms

operates through dual cyclical processes. Internally, the quality feedback mechanism drives dynamic knowledge optimization—for instance, low employer ratings on technical competencies activate AI course module enhancements—while motivation mechanisms amplify organizational synergy through performance rewards incentivizing faculty engagement in alliance projects. Externally, organizational synergy directly responds to the Ministry of Education's mandatory industry participation requirements for New Liberal Arts projects, and competency portfolios strictly comply with the credit bank system stipulated in China's Education Modernization 2035 for lifelong learning accreditation. This integrated architecture engenders structural resilience: when externally mandated reform imperatives evolve (e.g., toward digital humanities), modular course clusters enable rapid curricular reconfiguration while cross-school task forces facilitate immediate humanities resource mobilization. Consequently, a self-perpetuating ecosystem materializes wherein operational architectures activate governance frameworks, and regulatory parameters reciprocally sustain functional processes.

4. Implementation Cases: Practical Exemplars of Interdisciplinary Communities

4.1 Project Context and Regional Distinctiveness

University A, situated in a core city of the Guangdong-Hong Kong-Macao Greater Bay Area, leverages regional FinTech industrial clustering advantages and was selected for the Ministry of Education's inaugural New Liberal Arts pilot program in 2021. The project directly addresses the Greater Bay Area's digital financial transformation needs, focusing on resolving critical weaknesses in traditional business education—such as deficient technical application capabilities and the absence of cross-border financial scenarios. Led by the university's vice president, it integrates resources from the Business School, Computer Science School, and three leading cross-border payment enterprises to cultivate interdisciplinary talent proficient in blockchain, cross-border regulatory frameworks, and business analytics. Its regional distinctiveness is manifested through curricula deeply embedded in authentic Greater Bay Area scenarios, including cross-border trade

settlement and digital currency pilots. For instance, students are required to analyze financial data from the Hong Kong-Zhuhai-Macao Bridge customs clearance processes.

4.2 Knowledge Integration Mechanism: Collaborative Curriculum Development and Faculty Synergy

The cornerstone of knowledge integration is the co-creation of the Blockchain Finance course. Business School professors design finance modules covering cross-border payment mechanisms and risk management frameworks; Computer Science faculty lead technical modules on smart contract programming and consortium blockchain deployment; industry experts contribute 12 authentic case studies on cross-border trade financing. The dual-supervision system (DS) pairs each student with both a business mentor and a technical mentor to jointly guide practical projects(e.g., **Figure 3. Collaborative Learning Synergy**). For example, student teams developing cross-border letter-of-credit systems on Ethereum must undergo dual evaluations: financial compliance reviews by business mentors and code security audits by technical mentors, who provide iterative feedback from commercial and programming perspectives respectively. This model enhanced course knowledge integration by 40% and achieved a 95% student completion rate for interdisciplinary projects.
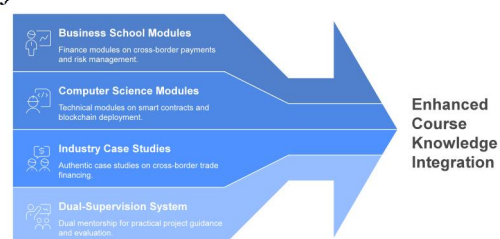

Figure 3. Collaborative Learning Synergy

4.3 Quality Feedback Mechanism: Dynamic Optimization Pathways

The project established a competency portfolio tracking system, with its core innovation being the integration of the CFA FinTech certification into the evaluation framework(e.g., **Table 2. Competency Portfolio Evaluation Metrics**). Students must pass two certification modules—Blockchain Finance Applications and RegTech—with scores directly convertible into

course credits. Annual employer evaluations of graduates revealed a 20% deficit in cross-border payment system development capabilities over the past two years. Consequently, the project team dynamically adjusted curricula: adding a cross-border digital identity authentication practicum co-taught by Hong Kong Monetary Authority (HKMA) experts, and expanding the foundational blockchain course from 4 to 8 credit hours with enhanced cross-border scenario studies. Employer evaluations carry a 35% weight in curriculum adjustment decisions, ensuring real-time alignment with industry demands.
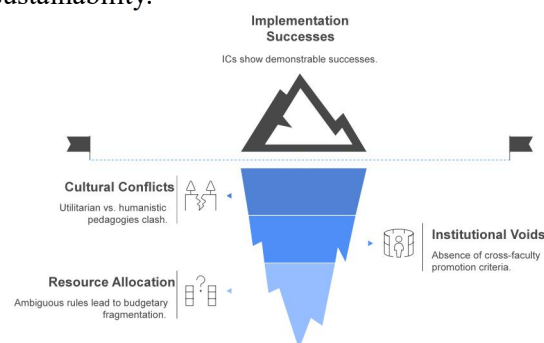
Table 2. Competency Portfolio Evaluation Metrics

Evaluation Dimension	Evaluation Agent	Conversion Rule
Technical Application Skills	CFA Certification Exam	Scores ≥70 convert to 2 credits
Business Analysis Ability	Corporate Project Defense	Grade A awards innovation practice credits
Cross-border Compliance	HKMA Case Assessments	Exemption from Cross-border Finance Regulations
Comprehensive Competency	Dual-Supervisor Joint Review	Determines thesis topic eligibility

4.4 Implementation Outcomes and Sustainability Design

Over three years of operation, the project has generated replicable outcomes. Students secured an average of 1.2 technical patents or financial innovation awards, with 80% of graduates employed by Greater Bay Area FinTech firms. Industry-academia alliance enterprises deepened ecological engagement: a leading payment provider donated a cross-border settlement sandbox lab, while a blockchain company offers 50 annual internships. To ensure sustainability, University A reformed faculty promotion criteria—recognizing curriculum co-development as equivalent to research output—and established a FinTech interdisciplinary fund investing RMB 8 million in faculty training and course development. These designs were included in the Ministry of Education's New Liberal Arts Exemplary Case Repository, establishing a regional reform paradigm.

5. Challenges and Strategies

5.1 Systemic Barriers

Despite demonstrable successes in implementation, Interdisciplinary Communities (ICs) continue to confront entrenched systemic barriers. Profound cultural conflicts arise at the epistemic level, where utilitarian business pedagogies—emphasizing instrumental skills and market-driven knowledge—clash with humanistic traditions prioritizing critical inquiry and ethical reflection. Such tensions manifest concretely when technology-centric modules overshadow ethical debates in AI governance curricula, or when financial ROI metrics dominate assessments of humanities-integrated projects. Concurrently, institutional voids perpetuate structural instability: the absence of cross-faculty promotion criteria disadvantages IC-participating faculty in tenure reviews, while ambiguous resource allocation rules lead to budgetary fragmentation(e.g., **Figure 4.Systemic Barriers Hinder Interdisciplinary Communities**). For instance, 68% of IC projects in Chinese universities report delayed funding disbursements due to rigid "single-discipline" financial protocols, forcing reliance on temporary external grants that undermine sustainability.

Figure 4. Systemic Barriers Hinder Interdisciplinary Communities

5.2 Actionable Pathways

To address these systemic challenges, institutions should adopt a dual-strategy approach integrating cultural mediation and structural reform. The establishment of permanent epistemic negotiation workshops enables faculty to reconcile pedagogical conflicts—such as tensions between instrumental business training and humanistic critical inquiry—through structured deliberations on concrete scenarios, e.g., co-designing AI ethics modules for finance

curricula, generating consensus frameworks that demonstrably mitigate disciplinary value clashes, as evidenced in Fudan University's implementation. Concurrently, developing institutional governance white papers—informed by models like Duke University's interdisciplinary charter—formalizes three critical dimensions: accountability mechanisms recognizing cross-departmental teaching in promotion reviews; pooled funding protocols requiring multi-dean authorization to ensure resource stability; and compliance systems linking budgetary allocations to graduate employability metrics. This integrated methodology, exemplified by Tsinghua University's governance reforms which institutionalized faculty collaboration mechanisms, has proven instrumental in transitioning Interdisciplinary Communities from experimental initiatives toward structurally embedded academic paradigms.

Acknowledgments

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