

Interdisciplinary Curriculum Design for Journalism and Communication Programs within New Liberal Arts Industry-Academy Institutes

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Abstract. Against the dual backdrop of the New Liberal Arts Initiative and the rise of Industry-Academy Institutes, Journalism and Communication programs face the challenge of misalignment between "disciplinary logic" and "industry logic." Focusing on curriculum design and drawing on Constructivist Learning Theory, the T-shaped Competency Model, and the CDIO (Conceive-Design-Implement-Operate) framework, this paper proposes a three-tiered progressive structure: "Platform + Module + Micro-credential." Platform courses (2 credits) solidify digital literacy and design thinking; Module courses (10 credits) embed real-world enterprise projects; Micro-credentials (2 credits) offer flexible skill extension. Two years of pilot implementation show significant improvement in students' transversal competencies. Enterprise satisfaction rose from 78% to 92%, and 35% of student outputs were directly adopted by partner companies. The study addresses four key challenges—disciplinary cultural conflicts, faculty interdisciplinary barriers, fragmented resources, and student cognitive load—through mechanisms like dual mentors (academic/industry), flexible semester scheduling, and diversified assessment. This forms a replicable, plug-and-play lightweight reform paradigm. Limitations include the sample being confined to three Industry-Academy Institutes; future steps involve decomposing the curriculum into granular micro-units and diffusing the model across broader media-related disciplines to build a more open industry-education integration ecosystem.

Keywords: Interdisciplinary Curriculum; Industry-Academy Institute; Journalism and Communication Education.

1. Introduction

As the "New Liberal Arts" initiative transitions from conceptual advocacy to practical implementation, higher education is undergoing a profound shift from "disciplinary specialization" towards "interdisciplinary integration." The New Liberal Arts Research and Reform Practice Project launched by the Ministry of Education in 2020 explicitly calls for breaking down disciplinary barriers, guided by modern information technology and industry needs, to cultivate versatile liberal arts talents for the new era. Concurrently, Industry-Academy Institutes (IAIs), serving as novel vehicles for industry-education integration, are proliferating rapidly within universities. Anchored by partnerships with leading industry enterprises, they embed real projects, authentic scenarios, and practical evaluation throughout the talent cultivation process, becoming vibrant testing grounds for the New Liberal Arts strategy.

Journalism and Communication programs inherently lie at the intersection of humanities, arts, and technology. However, they have long been constrained by a "Journalism---Communication Studies" binary curriculum structure, often leaving students strong in theory but deficient in interdisciplinary capability. Therefore, designing an interdisciplinary curriculum system for Journalism and Communication within the fertile ground of New Liberal Arts IAIs—one that preserves disciplinary identity while flexibly connecting with diverse industries—has become an urgent imperative.

From a practical demand perspective, emerging fields like digital content, smart cultural tourism, health communication, and brand technology constantly seek versatile talent: individuals proficient in both narrative and data, capable of content creation while wielding algorithmic tools. Traditional Journalism and Communication programs, often narrow in scope with slow curriculum update cycles, struggle to respond swiftly. While IAIs provide access to enterprise projects and dual mentors,

without robust curriculum design, interdisciplinary collaboration risks becoming a superficial "potpourri" of electives, failing to foster systematic competency progression. Consequently, focusing on the meso-level of "curriculum" to explore how to build interdisciplinary, project-based, and iterative course frameworks within IAs can not only unlock new growth points for Journalism and Communication programs but also offer a replicable paradigm for other liberal arts disciplines.

Compared to existing research, this paper avoids macro-level institutional governance discussions and large-scale data surveys. Instead, it zooms in on "curriculum design" itself: how instructors select intersecting disciplines, structure modules, embed enterprise scenarios, and evaluate learning outcomes. Based on literature review and case studies of three publicly operational New Liberal Arts IAs, and integrating perspectives from Constructivist Learning Theory, the T-shaped Competency Model, and CDIO, the study proposes a "lightweight" reform path—achieving maximal competency gains with minimal structural disruption. The paper first clarifies key concepts, then introduces the three-tiered "Platform + Module + Micro-credential" curriculum architecture, analyzes specific modules and supporting mechanisms, and finally reflects on implementation challenges and improvement strategies, aiming to provide actionable guidance for institutions.

2. Concept Clarification and Theoretical Foundation

2.1 The Connotation of "Interdisciplinarity" in New Liberal Arts

"Interdisciplinarity" within the New Liberal Arts context is not merely the superficial addition of course titles. It centers on real-world problems to achieve triple integration of knowledge, competencies, and values. First, *Knowledge Integration*: Breaking the linear "Journalism---Communication Studies" logic by introducing heterogeneous knowledge systems like Data Science, Design, and Marketing to form a networked knowledge map. Second, *Competency Compositing*: Using the communication chain ("Information Gathering---Narrative Production---Media Presentation---Effect Evaluation") as the backbone, overlaying transversal skills like data tools, user research, and brand strategy to build a "specialized + versatile" competency matrix. Third, *Value Reshaping*: Guiding students to reflect on the tensions between technological ethics, business logic, and public interest within authentic industry contexts, thereby establishing new communication values oriented towards digital civilization [1].

2.2 Characteristics of IA Curriculum

IA curricula exhibit three salient features: *Project-based*, *Modularized*, and *Co-constructed by Academia and Industry*. Project-based emphasizes "real topics, real work," where course units directly address enterprise needs. Modularization breaks long semesters into shorter 4-6 week task packages, reducing student cognitive load. Co-construction manifests as "dual mentors, dual scenarios, dual evaluation": academic faculty handle theory and methodology [2], industry mentors provide context and standards, jointly defining talent specifications, guiding the process, and assessing outcomes.

2.3 Pain Points of Traditional Journalism & Communication Curricula

Traditional curricula face three barriers: 1) *Disciplinary Barriers*: Courses segmented by sub-disciplines lead to content redundancy and lack horizontal integration. 2) *Practice Lag*: Teaching case updates occur annually, while industry trends evolve weekly. 3) *Singular Assessment*: Over-reliance on written exams and final projects, neglecting measurement of soft skills like teamwork, cross-domain communication, and iterative refinement, causing a mismatch between student abilities and job requirements.

2.4 Theoretical Support

2.4.1 Constructivist Learning Theory

emphasizes "context" and "collaboration." Within the authentic project contexts of IAI, students actively construct multi-layered understandings of complex communication problems through multilateral collaboration with industry mentors and peers.

2.4.2 T-shaped Competency Model

uses "Vertical Depth + Horizontal Breadth" as coordinates. Vertically, it ensures solid core communication competencies; horizontally, interdisciplinary modules expand skills in data, design, business, etc., achieving "specialized + versatile."

2.4.3 CDIO (Conceive-Design-Implement-Operate)

Engineering Education Concept, originally for engineering, offers a "full-process, iterative, outcome-oriented" logic transferable to Journalism and Communication education. It decomposes a communication task into four stages—"Need Conception---Content Design---Media Implementation---Effect Operation"—forming recyclable, quantifiable course units [3].

3. Overall Philosophy of Interdisciplinary Curriculum Design

3.1 Goal Orientation

The curriculum targets frontline digital content industries, cultivating versatile talents who "understand communication, master technology, and know the industry": capable of discerning needs through a communication lens, realizing creativity with data and tools, and delivering measurable value within authentic business scenarios.

3.2 Design Principles

3.2.1 Interdisciplinarity Without Diluting the Communication Core

Regardless of introducing Data Science, Design Thinking, or Market Strategy, all teaching activities revolve around the communication chain ("Information Gathering---Narrative Construction---Media Presentation---Effect Evaluation"), ensuring professional competency isn't fragmented.

3.2.2 Project-Driven Embedding in Real Industry Scenarios

Each teaching unit connects to an ongoing enterprise project. Students work in teams within real enterprise workflows, with academic and industry mentors jointly setting milestones, enabling "learning by doing."

3.2.3 Learning Outcomes Convertible to Enterprise-Ready Solutions

Assessment criteria align with corporate KPIs (e.g., views, conversion rates, user dwell time). Final pitch sessions are judged by enterprise executives; outstanding proposals can be directly implemented. [4]

3.3 Curriculum Architecture Overview – "Platform + Module + Micro-credential" Three-Tiered Progression

Tier 1: Platform Courses (General Layer) - 2 Credits: Courses like Digital Literacy, Design Thinking, Industry Introduction establish foundational interdisciplinary language.

Tier 2: Core Interdisciplinary Modules (Professional Layer) - 10 Credits: Structured in 4-6 week short cycles. Modules include Data Journalism, Brand Narrative, and Intelligent Media Technology; students choose two.

Tier 3: Micro-credential Projects (Extension Layer) - 2 Credits: Enterprises issue 1-2 week micro-tasks; completion earns digital badges, redeemable for internship credits. This progressive structure ensures knowledge depth while maintaining flexible expansion.

4. Specific Design of Course Modules

4.1 Platform Courses (General Layer)

4.1.1 "Digital Literacy and Information Ethics" (32 Contact Hours, 2 Credits)

Co-taught by Journalism/Communication and Computer Science faculty. Based on a four-stage competency model ("Find, Judge, Use, Reflect"). First half: Hands-on data scraping, cleaning, and visualization exercises in computer labs. Second half: Ethics workshops debating "algorithmic bias," "deepfakes." Deliverables: A small data project + 500-word ethics reflection report. Jointly assessed by faculty and corporate data compliance officers.

4.1.2 "Design Thinking and Innovation Methods" (32 Contact Hours, 2 Credits)

Co-taught with Industrial Design school. Held in a "Co-creation Lab." Students in groups of 6 follow the 5-step process ("Empathize-Define-Ideate-Prototype-Test") to redesign a real product pain point. Final: "90-second elevator pitch" voted by enterprise product managers; top group gains direct access to subsequent micro-credential projects.

4.1.3 Contact Hours, Credits, Assessment

Total 64 contact hours, 4 credits. No written exams. Assessment: 20% in-class exercises, 40% project completion, 20% reflection report, 20% peer evaluation.

4.2 Core Interdisciplinary Modules (Professional Layer)

4.2.1 "Data Journalism and Visualization" (64 Contact Hours, 4 Credits):

Disciplines: Journalism & Communication + Data Science

Scenario: Desensitized big data from bike-sharing systems provided by a local transport group.

Process: Wk1: Data Science mentor teaches cleaning & statistics. Wk2-3: Journalism mentor guides topic selection & data story scripting. Wk4-5: Visualization workshop (Datawrapper, Flourish). Wk6: Enterprise pitch judged by Transport Group Operations Director.

Output: H5 interactive data news story + 2000-word process document. Outstanding works published on enterprise WeChat; authors gain direct summer internship entry.

4.2.2 "Brand Narrative and User Experience" (64 Contact Hours, 4 Credits):

Disciplines: Journalism & Communication + Marketing + Psychology

Scenario: An upcoming anti-blue light skincare product launch for a cosmetics brand.

Process: Wk1: Psychology mentor teaches "user cognitive paths." Wk2: Marketing mentor analyzes competitor positioning. Wk3-4: Student groups conduct focus groups & user journey mapping. Wk5: Produce a 60-second short video ad. Wk6: A/B testing on Xiaohongshu (Little Red Book); winning group determined by conversion rate.

Output: User journey map + short video proposal + test data report. Groups exceeding industry average conversion rate receive project bonuses.

4.2.3 "Fundamentals of Intelligent Media Technology" (64 Contact Hours, 4 Credits):

Disciplines: Journalism & Communication + Artificial Intelligence

Scenario: Lab GPU servers + open-source Chinese LLMs.

Process: Wk1-2: AI mentor demos text generation, image synthesis, virtual anchor driving. Wk3: Journalism mentor introduces "Trustworthy AI Content" evaluation framework. Wk4-5: Student

groups produce 2-min news videos using "AI generation + human oversight." Wk6: "Algorithm Ethics Debate" judged jointly by Law and Media faculty.

Output: Prototype video + debate performance + technical documentation. Best team wins funding for joint "AI Content Safety" research project.

4.3 Micro-credential Projects (Extension Layer)

4.3.1 "Short Video Operations" (2 Credits)

Co-developed with top MCN agency. 4-week online workshop. Tasks: Account positioning, topic library, 3 short videos, 1 operations review. Weekly live feedback from agency ops manager. Digital badge awarded upon passing, redeemable for 2 weeks internship credit.

4.3.2 "Virtual Anchor Production" (2 Credits)

Co-developed with Animation school. 4-week intensive offline. Tasks: Character design, voice driving, live script, 10-min trial broadcast. "Virtual Anchor Competition" on final day; winning works featured on university's official Bilibili account.

4.3.3 Implementation Process

1) Enterprise releases need → 2) Students form teams freely → 3) 4 weeks intensive mentoring → 4) Enterprise assessment → 5) Digital badge issued & recorded on blockchain. Entire process tracked visually via "IAI Mini-program."

4.4 Supporting Mechanisms

4.4.1 Dual-Mentor System

Academic faculty handle theory/method; industry mentors handle context/standards. Weekly 15-minute stand-up meetings ensure alignment.

4.4.2 Flexible Semester

Each semester includes 2-week "Immersion Project Weeks" (regular classes suspended), with industry mentors on campus.

4.4.3 Diversified Assessment

50% Process (logs, iterative drafts) + 30% Enterprise (KPIs, pitch) + 20% Peer (collaboration contribution).

5. Implementation Challenges and Countermeasures

5.1 Disciplinary Cultural Conflicts

Conflicting discourses and values (e.g., Journalism's focus on public good/ethics, Data Science's pursuit of algorithmic precision, Marketing's focus on conversion/ROI) create tension. **Countermeasure:** Establish monthly "Curriculum Community" roundtables (last Friday PM). Faculty, industry mentors, student reps meet. Use "User Story" templates: Students present outputs; faculty "translate" its significance from their discipline's view in one sentence. Jointly refine unified evaluation criteria documented in minutes, guiding syllabus revision. Conflict reduced significantly after two sessions; students reported clearer standards.

5.2 Faculty Interdisciplinary Bottlenecks

5.2.1 Industry Mentor Teaching Skills Training

Industry mentors are business-savvy but lack teaching skills (e.g., unclear explanations, fast pace). **Countermeasure:** Offer 2-day "Micro-teaching Workshops" during breaks (focus: task decomposition, giving oral feedback). Use micro-teaching + peer review: 10-min trial teaching

recorded & critiqued. 27 mentors trained Summer 2023; satisfaction 93%; "fast pace" issue reduced by 40%.

5.2.2 Academic Faculty Short-term Industry Immersion

Traditional long-term (6+ months) immersion faces resistance due to research pressure. **Countermeasure:** "Short-cycle + Project-based" model: 4 consecutive weeks, 2 days/week onsite, completing a jointly defined micro-project. Post-immersion, share outcomes in Pecha Kucha (20x20) format at faculty meetings & upload to online case library. "Go with a task, return with a case." Fall 2023: 12 faculty participated, produced 18 reusable cases, significantly boosting self-efficacy.

5.3 Fragmented Course Resources

Resources (cases, datasets, templates) often scattered across personal clouds/WeChat groups, hindering access. **Countermeasure:** Co-build an online "Case Repository" with enterprises. Tag resources 4-dimensionally (Industry---Scenario---Tool---Outcome), supporting keyword/tag search. Faculty upload teaching cases; enterprises upload desensitized data; students can remix/iterate; system logs contributions. Repository refreshed by 10% each semester. Usage tripled (2→11 searches/student/month) within 3 months; repetitive questions down 60%.

5.4 Student Cognitive Load

Intensive interdisciplinary projects (new tools, fast pace) cause anxiety. **Countermeasure:** "Learning Navigator Map + Tiered Task Packs":

(1) *Navigator Map* (Gantt chart format): Shows weekly goals, tools needed, prerequisites; accessible via QR code.

(2) *Tiered Task Packs*: "Basic" (mandatory), "Advanced" & "Challenge" (optional), with corresponding grading weightings.

6. Conclusion

The proposed "Platform + Module + Micro-credential" three-tiered progressive curriculum effectively bridges the gap between academic disciplinary logic and industry logic. Platform courses equip students with interdisciplinary "common language." Module courses forge composite competencies through authentic projects. Micro-credentials offer agile responses to technological change. Transversal competency assessments show average student scores increased by 31% in data tools, user insight, and teamwork. Enterprise satisfaction surged from 78% (pilot start) to 92%. Cumulatively, 35% of course outputs secured direct adoption or further development by partner enterprises, achieving "classroom-to-workplace" seamlessness.

The key innovation of this lightweight architecture is its "replicability and pluggability." Credit ratios, assessment rubrics, and enterprise engagement processes are templated, enabling rapid adaptation within "pan-media" disciplines like Advertising, Arts Management, and Digital Publishing, significantly lowering reform costs. However, limitations exist: the sample is confined to three IAIs within the Yangtze River Delta's digital content and new retail sectors, lacking regional and sectoral diversity. Graduate tracking only covers two cohorts, insufficient for verifying long-term career impact.

Next steps involve decomposing existing course packages into 15-20 "granular" micro-units (each $\approx$ 2 contact hours, 1 skill, 1 deliverable), supporting on-demand assembly by institutions. Concurrently, collaborate with industry associations to build an "Open Course Market," attracting more regional industry leaders to foster a continuously evolving industry-education integration ecosystem.

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