

Research and Practice on the Cross-University Credit Recognition Teaching Model for the UI Design Course

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Abstract

As the digital transformation of higher education continues to deepen, cross-university course registration and mutual credit recognition(as a resource sharing mechanism) have provided an opportunity for regional universities to breathe new life into existing teaching resources, overcome weaknesses in disciplines, and more significantly improve the overall quality of applied talent development. UI Design is a required course in the Digital Media Technology program, which has a high degree of practicality, iteration speed and industry relevance. Currently, local universities are grappling with various problems, such as uneven distribution of faculty, lack of hands-on training facilities, outdated curriculum that fails to keep pace with industry needs, and monolithic teaching methods. This research builds on the experience of cross-university credit reform of Liaoning Province universities. Considering the pedagogic features of the UI course, this study examines the practical challenges hindering cross-university course sharing, and then proposes a "five-in-one" cross-university teaching model based on resource co-construction, online-offline integration, offline practice, school-enterprise integration and comprehensive evaluation. The proposed model is tested through cross-university collaborative teaching practice. This research seeks to offer insights for cross-university credit reform in digital technology courses, share excellent teaching resources among universities in the region, and enhance efficiency and quality in application-oriented design talent training.

Keywords

Cross-university study, inter-institutional credit mutual recognition, user-interface design, digital media instruction.

1. Introduction

In order to further implement the "Implementation Opinions on Deepening Undergraduate Teaching Reform and Comprehensively Improving the Quality of Talent Cultivation" ([2020] No. 47), and promote open-door education, as well as facilitate the sharing of high-quality educational resources, the Department of Education of Liaoning Province has been actively supporting the process of applying for cross-university online course credit recognition among undergraduates. The province's universities are encouraged to make use of online course platforms to run pilot projects in cross-university course sharing and mutual credit recognition, thus facilitating the regional flow of high-quality higher education resources.

UI Design is one of the fundamental courses in digital media and art design-related studies. Its teaching material includes the visualisation of mobile and web interfaces, building interaction logic and optimising user experience, amongst others. The curriculum should be closely related to the competency requirements of jobs in the internet industry, new media industry, and cultural creative design industry. The course thus serves as a crucial teaching tool in closing the gap between academic performance in the classroom and industry practice requirements.

In the traditional model whereby each institution offers its curriculum in isolation, many local application-based universities are limited by objective factors such as the size of faculty reserves, access to supporting training equipment and access to genuine project sources. Consequently, classroom teaching often boils down to imparting theoretical knowledge and basic training on how to use software tools when in reality frontier industry cases and complete practical projects are relatively rare in the classroom. The resulting instructional product is inadequate to meet the competency standards that are changing at a very fast pace in the UI design profession. In the meantime, institutions of different types demonstrate divergent strengths and weaknesses regarding faculty preparedness, curriculum structure, and practice training opportunities in the UI field. Teaching resources are still highly compartmentalized within universities and teaching activities are carried out in a functional closed system.

The cross-university credit recognition system will facilitate the pooling of quality faculty, course resources and training platforms across various universities and thus implementing pedagogical complementarity and mutual recognition of learning outcomes among institutions. This mechanism is effective in redressing the instructional shortcomings created by the resource limitations of any one institution[1-2]. Considering these conditions, this paper relies on two full cycles of genuine cross-university collaborative teaching practice to develop an implementation trajectory of cross-university credit-bearing teaching that would be specific to the unique characteristics of the UI Design course. The research optimizes the whole process of instruction, streamlines the course assessment and evaluation system, and aims at raising the overall quality of teaching and enhancing integrated abilities of students to practice-oriented innovation..

2. Prevailing Inadequacies in Traditional Teaching and Cross-University Learning Practices of the UI Design Course

A review of the existing state of affairs in institutions that provide UI Design curricula within the region shows that, regardless of the traditional single-institution delivery model or the existing cross-university credit-recognition system, the course has glaring practical shortcomings in four dimensions: resource provision, pedagogical organization, assessment and evaluation, and multi-stakeholder coordination. These weaknesses directly hinder the achieved effectiveness of talent development based on courses and at the same time weaken the quality of implementation of the cross-university credit-sharing mechanism.

2.1. Imbalanced Allocation of Internal Teaching Resources among Institutions

Institutions with different institutional typology have significant differences in the level of course development in UI Design. Comprehensive universities, which enjoy a long history of faculty ranks and established curricular structures, are more likely to focus their pedagogical efforts on the development of design thinking and theoretical innovation. Art-oriented schools, in their turn, lay stress on visual aesthetic expression, and practice-based training has accumulated significantly more instructional experience. Technology-oriented universities are focused on building interaction logic and viability of technical implementation, bringing their teaching content into closer alignment with industry practice needs[3].

The majority of local applied undergraduate institutions, however, face structural challenges such as lack of diversification in the composition of professional faculty, obsolescence of training hardware infrastructure and lack of up-to-date pedagogical resources. This has made these institutions find it difficult to provide a cohesive instructional product that concurrently meets aesthetic articulation, technical realization, and industry alignment. This can lead to disjointed learning by students, leaving them ill-equipped to meet the practical demands of working life when they leave school. Moreover, the educational resources of high quality that

have been amassed by different institutions over time are mostly non-circulatory, creating mutually isolated teaching silos. This creates a paradoxical state whereby better teaching resources lie dormant and unused in some institutions, and at the same time other institutions are experiencing resource starvation.

2.2. Rigidification of Cross-University Teaching Organization and Inadequate Articulation between Online and Off-line Teaching Links

Currently, a significant proportion of cross-university courses are still based on an unsophisticated teaching model that involves the playback of recorded lectures and self-directed learning by students, making the instructional format relatively rigid. Course development institutions generally provide standardized learning resources, including video archives, courseware documents and post-class exercises, without providing specific tutorial assistance, guided practical operation or multi-stakeholder classroom interaction. Similarly, partner institutions offering these courses to their students have not put in place equivalent offline teaching systems thus excluding individualized, practice-based teaching elements[4]. Consequently, after students complete online course content, there is no follow up provided by offline instructors. As a result, the long-standing learning challenges of students, including learning the logic of interface layout, creating interaction schemes and becoming proficient in software tools, are left more or less unresolved.

2.3. Imperfect Credit Assessment System and Ambiguous Educational Orientation

The existing assessment methods of cross-university coursework are mostly based on the metrics like online learning time logs, chapter-based quiz scores, and end-of-term submission scores, thus limiting the extent of assessment. These mechanisms are biased towards mainly checking the acquisition of theoretical knowledge, but ignoring the main competencies inherent in the UI Design course, which include design innovation ability, practical operational skills, and project implementation skills. Moreover, grading standards and credit recognition policies differ significantly among institutions. In some instances, institutional focus on maximizing the number of courses enrolled has been at the cost of strict control over quality of instructional output, thus reducing substantive value of credits earned by cross-university enrollments.

2.4. Inadequate Construction of Operation Mechanisms for Inter-University and University-Enterprise Collaboration

Current cross-university course-taking practices are largely unidirectional sharing of teaching resources, with host universities and partner universities lacking dedicated channels for pedagogic exchange. Shared practices such as collaborative lesson planning, co creation of curricula, and collective development of teaching materials have not been realised. A clear gap remains between instruction and industry practice, as real enterprise UI project resources and current technical standards have yet to be successfully integrated into classroom instruction. As a result, the pace of curriculum content development is far slower than the rapid development of the UI industry in the face of new media and artificial intelligence, resulting in a notable disconnect between the skills students develop during their time at university and the performance demands of the workplace[5-6].

3. Construction of an Innovative Teaching Mode for Cross-University Study of the UI Design Course

To fill the pedagogical gaps identified above, this article will rely on the practice-intensive, innovation-oriented and industry-responsive nature of the UI Design course to develop a five-in-one cross-university teaching model, which includes resource co-construction, online course

linkage, offline hands-on training, school-enterprise collaboration, and diversified evaluation, as shown in Figure 1. The model guarantees end-to-end coherence in the whole process of teaching by standardizing benchmarks of instructional execution and integrating scattered high-quality pedagogical resources. Based on this, the cross-university instruction development focus moves beyond resource sharing to a paradigm of talent development based on coordinated multi-stakeholder assurance.

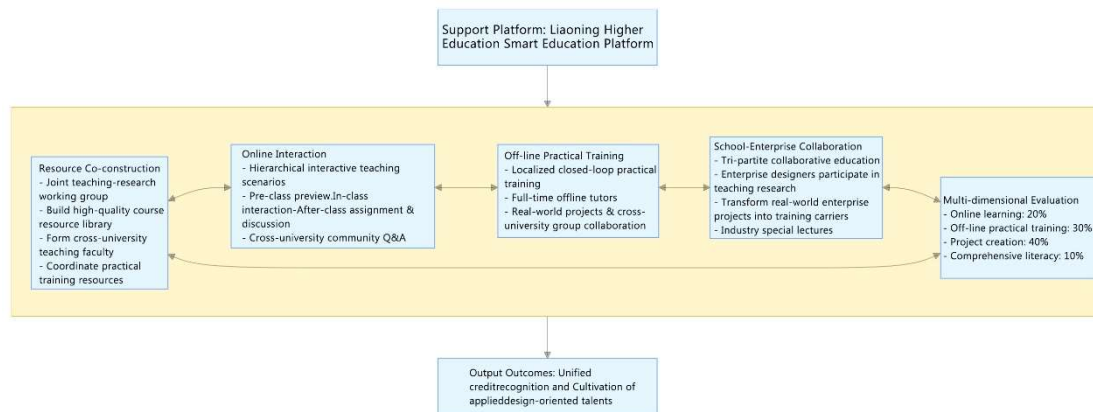


Figure 1. Construction of the Teaching Model for Cross-University Credit Courses

3.1. Resource Co-construction: Establishment of a Standardized Cross-university Curriculum Resource System

The group incorporates the respective strengths of the involved institutions in faculty staffing, curriculum development and practical training infrastructure, as well as standardizing course syllabi, core knowledge frameworks, practical training implementation requirements and credit recognition procedures. This initiative will deal with the current issues of disjointed teaching materials and lack of uniformity in implementation standards among institutions.

(1) Collaboratively create a repository of course materials of high quality. The repository will be enriched with modern industry-informed content, including AIGC-assisted UI design, adaptive interaction design, and immersive interface design, thus completing the update and iteration of legacy teaching resources by combining existing high-quality instructional videos, case material packages, software practice tutorials, and industry standard manuals across each institution.

(2) Create a cross-university teaching team to teach together. This involves operationalizing a mechanism of joint course delivery and inter-institutional pedagogical research, where faculty members in various institutions take on differentiated roles in theoretical teaching, practical coaching, and project outcome assessment, thus facilitating complementary use of faculty expertise.

(3) Organize the co-development of practical training materials. Open shared access to multi-institutional design laboratories and digital creation platforms, standardize the implementation standards of practical training projects, and thus make sure that students who take part in cross-university study are provided with substantively similar hands-on training conditions[7].

3.2. Online Linkage: Creation of Interactive Teaching Scenarios

This study examines two cohorts of undergraduate students enrolled in the digital media technology program as the primary research subjects, utilizing the Liaoning Higher Education Smart Education Platform to establish a sustained online cross-university learning environment that effectively mitigates the pedagogical barriers imposed by geographic

separation among institutions. The instructional design is a stratified teaching implementation model that includes three combined stages: introduction of the case-scenario, layered video-based elaboration of the main content, and follow-up Q&A support. During pre-class, micro-lecture resources and reference cases are sent to students, allowing them to preview and learn independently. In synchronous online sessions, teaching activities focus on salient and difficult issues in the UI design curriculum, with the analysis of the latest industry cases and demonstration of practical operational methods; parallel interactive elements involve live audio-video interaction and peer assessment of student performance. The post-class stage involves assigning specific, tiered activities, access to an open online exercise library, and structuring group discussions and seminars. Simultaneously, a cross-university Q&A community has been formed, and faculty members of both partner universities take turns to respond promptly to student questions about software operations, design rationale, and design standards, thus addressing the interactional shortcomings inherent in traditional online pedagogical paradigms[8].

3.3. Off-line Practical Operation: Implementation of Localized Closed-loop Practical Teaching

Using the physical training facilities of each university involved, localized practical training is strategically aligned with the pedagogical development of the online curriculum thus creating an integrated instructional model whereby theoretical learning is provided online and practical training is provided face-to-face. The universities involved provide special on-site tutors who track the pace of the online coursework and plan a systematic progression of practical tasks, such as drills in operating software, interface replication exercises, conceptualization of original design, and refinement of project deliverables through iteration. These teachers also offer one-on-one remediation based on the particular learning challenges that each learner has. Moreover, real UI design commissions are presented as the main means of practical training, and cross-university teamwork is organized by intentionally mixing students of different universities. Collectively, these teams engage in the design and creation of real-world artifacts like mobile application interfaces, web-based user interfaces, and mini-program screens, thus leveraging the complementary disciplinary strengths of students in different institutions at the same time developing collaborative capacity and innovation-driven practice.

3.4. University-Enterprise Collaboration: Iteration of Teaching Content Aligned with Industrial Standards

The combination of industrial resources of internet design companies and cultural-creative technology companies helps to implement the tripartite collaborative teaching model, which presupposes the cooperation of course-providing institutions, course-taking universities, and industry partners. UI designers who have significant experience in the field are involved in cross-university curriculum development, and they help keep instructional materials up-to-date with current design conventions, mainstream aesthetic orientations, and new tools and technologies. Real enterprise projects and subject-specific competition briefs are reused as training tools in the curriculum so that students can undergo the entire process of professional jobs in an immersive experience. Moreover, cross-university learners are provided with industry-related lectures covering competency needs of UI jobs, career advancement opportunities among practitioners, and cutting-edge technological advances. All these measures decrease the disconnect between institutional teaching and industrial practice, thus increasing the congruency of talent development and real workforce requirements in the sphere.

3.5. Multi-dimensional Evaluation: Constructing a Standardized Credit Assessment System

A multi dimensional evaluation system that incorporates process oriented evaluation, practical operation assessment, project based assessment and comprehensive literacy assessment will be put in place. The course grade is broken down into four weighted parts: online learning (20 percent) includes course attendance, completion of micro-lecture modules, performance on digital exercises, and participation in community-based discussions; offline practical training (30 percent) includes original UI design outputs and group projects as the core assessment artifacts, assessed based on visual presentation quality, interaction logic coherence, user experience completeness, and level of creative innovation; and overall competency (10 percent). Learners who achieve the predefined competency level are consistently given credit recognition, thus making cross-university credit mutual recognition operationalised by standardizing the criteria, ensuring consistency in rigor and quality assurance.

4. Pedagogical Implementation and Efficacy Assessment

This teaching innovation was facilitated by the Liaoning Higher Education Smart Education Platform, a regional cross-university credit recognition and course-sharing platform, to facilitate the cross-university offering of the UI Design course. The reform pilot involved 281 students in the Digital Media Technology program in two consecutive cohorts, and each instructional cycle lasted 16 weeks. After the implementation period, the effectiveness of teaching was evaluated based on three main mechanisms: statistical analysis of course performance data, questionnaire survey among participating students, and evaluation of original design works created by students by an expert panel.

The empirical results substantiate considerable gains attributable to the restructured instructional model. The course pass rate increased from 82.5% under the traditional paradigm to 97.5%, while the distinction rate rose correspondingly from 28.3% to 45.8%. Furthermore, student-submitted original design works evidenced notable improvements in completeness, creative sophistication, and industry alignment. Survey data corroborate these findings, with over 93% of respondents affirming that the cross-university model broadened their professional perspectives, effectively alleviated the constraints imposed by the limited instructional resources of any single institution, and markedly enhanced their practical proficiencies and design reasoning capabilities.

Collectively, the implementation evidence supports the effectiveness of the suggested five-in-one cross-university teaching model in remedying the systemic shortcomings of traditional instructional modalities, including uneven allocation of educational resources, pedagogical homogeneity, insufficient standardization of assessment, and poor school-enterprise articulation. The model enables effective flow and recycling of quality educational resources which produce much better holistic educational results and prove to be highly practical and have a great potential to be spread and implemented more widely.

5. Pedagogical Optimization Strategies and Future Directions

After two complete rounds of cross-university teaching practice, it is clear that the existing five-in-one pedagogical model has already reached a preliminary success. In order to stabilize the quality of instruction of the cross-university course and to guarantee the sustainable, long-term evolution of the curriculum, further optimization activities can be promoted in three main dimensions: institutionalization of teaching-research processes, empowerment of teaching with digital intelligence technologies, and synergistic development of talent with the help of deeper university-industry collaboration. The respective strategies are outlined as follows:

5.1. Establishment of a Normalized Cross-University Teaching-research Working Mechanism

A system of monthly cross-university teaching-research meeting shall be established, whereby the course instructors and on-site tutoring faculty of all partner universities will meet regularly to hold pedagogical deliberations and also to review and address issues that may have arisen during course delivery. Teaching material will be under constant improvement, with iterative revisions of training project materials and gradual harmonization of instructional implementation standards across institutions. Shared resource channels will be created among faculty members to allow mutual sharing and co-constructing of teaching cases, practical training implementation plans and assessment benchmarking criteria to drive the continuous iterative improvement of course content.[9].

5.2. Leveraging Digital Intelligence Technologies to Facilitate Pedagogical Iteration and Upgrading

The potential of the emerging technologies like AIGC in pedagogical application will be maximized to maximize all the stages of implementation of the course teaching process. The design tools that are AI-based will be presented to help students with interface design conceptualization, initial prototype creation, optimization of visual effects, and user experience analysis. An instructional module focused on combining AI technology with UI innovation design will be created, aligning the curriculum with the path of digitalization in the industry. Special attention will be paid to developing the ability of intelligent design applications among students and their ability to think innovatively[10].

5.3. Promotion of In-depth Collaborative Talent Cultivation Through University-Enterprise Cooperation

The intensity of the university-industry collaboration will be gradually increased by establishing stable and sustainable project linkage channels. The teaching process of the course shall be embedded with real commercial projects that are sourced in enterprises, professional discipline competitions, and assessment content related to vocational skill certification. This will ultimately lead to the establishment of a unified chain of instruction that includes coursework, competitions, certification and innovation and entrepreneurship thus fully enhancing the vocational competitiveness of students and their ability to innovate and engage in business.

6. Conclusion

The cross-university credit-based teaching model is a natural development in the evolution of higher education towards digitalized and collaborative models, which effectively solves the two-fold problem of uneven distribution of instructional resources and unequal quality of talent cultivation inherent in UI Design courses at local universities. The five-in-one cross-university teaching model that was created during this study works as a closed-loop system that includes co-constructed course materials, combined online-offline pedagogical delivery, school-enterprise joint implementation, and multi-dimensional evaluation systems, thus enabling the mutual exchange of high-quality instructional resources between institutions, standardization of pedagogical processes, and precision-oriented talent development. The empirical evidence of two rounds of authentic classroom practice demonstrates that the proposed model has measurable benefits in terms of instructional quality and professional competencies of students, which can be used as a practical paradigm to be applied to other cross-university collaborative teaching reform initiatives in digital media technology curricula. Further research should also improve the working mechanisms regulating inter-institutional and industry-partnered educational cooperation, leverage digital-intelligent technologies to

drive the constant iteration and improvement of courses, and tirelessly increase the quality of application-oriented digital media technology professionals in order to address the evolving demands of a high-quality new media industry.

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