

# Research on Teaching Reform for Cross-institutional Credit Study in Liaoning Province under the Background of Internet+

Yue Yuan\*

City Institute, Dalian University of Technology, Dalian, China

\*Corresponding author

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**Abstract:** In the context of "Internet+", advancing the system of cross-institutional credit study and credit recognition provides students with broader learning opportunities and access to quality educational resources. This paper starts from the practice of implementing the cross-institutional credit study project in Liaoning Province. It analyzes the achievements and problems encountered during the implementation of the project and proposes solutions, hoping to offer references for the future development of cross-institutional credit studies in Liaoning Province.

## 1. Introduction

Cross-institutional study and credit recognition are vital means for universities to share educational resources and achieve mutual construction. Essentially, it's an exploration of a teaching model based on the "Internet+ education" concept. It leverages the technical and platform advantages of the internet, relying on third-party online teaching management platforms. Based on previously shared high-quality courses, students can choose courses under inter-university agreements and earn credits, which are recognized upon review by the institution offering the course. This new internet-based teaching model allows students not only to access high-quality course resources and teaching systems but also broadens their learning space and perspective, enhancing their autonomy and flexibility in learning.

## 2. Basic Implementation of Cross-institutional Credit Study Project in Liaoning Province

With the development of the internet, resource sharing has become a primary information source in today's society. Resource sharing has allowed more students to benefit from excellent teaching resources in universities. Cross-institutional study and credit recognition are new paths to achieve resource sharing and will be themes in exploring future education models.

The "National Medium and Long-term Education Reform and Development Plan (2010-2020)" in 2010 clearly stated the establishment of a credit accumulation and transfer system to recognize and connect different types of learning outcomes as an essential way to build a 'lifelong learning interchange'. In 2015, the Ministry of Education further accelerated the development of online open courses and platforms suitable for China, based on existing achievements. Substantial funds were invested by local education authorities to create real-time online learning platforms for resource sharing courses in universities, providing convenient conditions for students to study courses from other universities without leaving their campuses. Liaoning Province actively responded to the national policies on educational reform. In September 2014, the Liaoning Provincial Education Department initiated the pilot work of cross-institutional credit study in ordinary universities and started the mutual recognition of credits across universities within the province. In January 2016, the Liaoning Provincial Party Committee's Higher Education Working Committee and the Provincial Education Department jointly issued the "2016 Work Points of the Provincial Education Department (Provincial Committee for Higher Education)", which emphasized "promoting cross-institutional courses and credit recognition based on quality open courses and online learning platforms." These efforts laid a solid foundation for the implementation of cross-institutional study and credit

recognition projects among universities in Liaoning Province[1].

In Liaoning Province, over 30 universities have participated in the teaching model of cross-institutional study and credit recognition. Regarding platform construction, in 2011, Liaoning Province developed the online learning platform "Cool Study Liaoning" based on the "Undergraduate Teaching Network of Ordinary Higher Education Institutions in Liaoning Province". The platform consists of provincial and university-level components and combines independent development with social participation, directly interfacing with the educational administration system data ports of each university. The provincial platform includes course management, learning community, and grade management modules; while the university-level platform includes course content, teachers, and scheduling. As of now, more than 40 universities in the province, including Dalian University of Technology and Northeastern University, have built university-level platforms with companies such as Chaoxing Moya, Huike Education, Waiyan Xunfei, Xuetao Online, and Zhizhi Tree. In terms of course construction, unlike traditional teaching models, the course constructors and users jointly establish course teams, unify lesson preparation, and conduct teaching and research activities. The course structure breaks away from textbook chapters and is organized into knowledge modules and points, highlighting key learning content. Universities in Liaoning Province can learn from each other's strengths in courses. Course constructors and user teachers form course teams, clarifying their respective responsibilities. They jointly develop course syllabi, schedules, teaching methods, and assessment methods. The cross-institutional credit study in Liaoning Province has been implemented since 2014. By 2023, it has carried out 17 semesters, offered 9,671 courses, and launched more than 1,000 high-quality courses on the Liaoning Higher Education Wisdom Education Platform (i.e., "Cool Study Liaoning"). More than 740,000 students from 56 universities in the province have studied through the "Cool Study Liaoning" platform to earn cross-institutional credits, establishing a mechanism based on the wisdom education platform for credit recognition and conversion[2].

### **3. The Significance of Implementing the Cross-institutional Credit Study Project in Liaoning Province**

Compared to traditional teaching evaluation methods, cross-institutional courses integrate various evaluation methods, such as online platform assessments, classroom discussion performance, homework, experiments, and final exams. Cross-institutional credit study makes the learning process more flexible and convenient, allowing students to learn the provincial elite open courses anytime and anywhere. They can watch video materials at any time, pause to think or search online about difficult points, repeatedly watch video explanations of challenging topics, and connect different knowledge points to create knowledge maps for each chapter, making learning more systematic. Compared to traditional teaching models, students have access to richer course information and a wider range of information channels, enabling them to comprehensively grasp the knowledge of cross-institutional courses[3].

The implementation of the cross-institutional credit study project not only provides students with more learning resources and pathways but also creates favorable conditions for teachers to improve their teaching levels and innovate teaching strategies and methods. From the students' perspective, they can access more learning resources from other institutions for free and save more study time through online teaching, allowing them to earn extra credits in their spare time, which is significant for efficient learning. From the teachers' perspective, the project's implementation is also significant. Currently, the teaching strategies and methods of cross-institutional credit courses at various universities in Liaoning Province are based on classroom teaching. However, the change in teaching methods to online cross-institutional study has made existing teaching strategies and methods not fully adaptable to the new teaching method. Therefore, establishing a more comprehensive set of online teaching strategies and methods, especially for cross-institutional credit courses, has become an integral part of implementing the cross-institutional credit study project in Liaoning Province's universities. Additionally, a wealth of external high-quality teaching resources and elite courses have laid a solid foundation for improving the teaching levels of teachers in universities in Liaoning Province.

## **4. Problems in the Implementation Process of the Cross-institutional Credit Study Project in Liaoning Province**

### **4.1. Lack of Strong Motivation and Initiative in Student Learning**

Cross-institutional study requires high self-management and self-directed learning abilities from students. Many students still rely on classroom teaching and lack the ability to integrate online video materials. The flexible nature of online cross-institutional credit courses, with little supervision over class time and location, often leads to students relaxing their standards, playing videos without being present, or simply watching them to complete learning tasks. Despite anti-dragging and switching functions in video playback, some students engage in other activities during playback, which is beyond the teacher's control. Some students with poor self-discipline fall behind in course progress and fail to submit assignments on time. The "statistics" function on the platform shows that task completion is slow, often rushed in the days before the deadline, leading to everyone studying online at the same time, which is affected by internet speed and impacts learning effectiveness. Through homework review, it is found that students engage in perfunctory work and plagiarism. Therefore, for this mode to be effective, students need to have self-driven learning motivation and a spirit of active exploration, which many students currently lack.

### **4.2. Insufficient Teaching Resources and Poor Maintenance of Teaching Platforms**

Course constructors lack a deep understanding of knowledge fragmentation, and teaching resources are not rich enough, with too traditional presentation forms, affecting students' enthusiasm for online learning. This is mainly reflected in the overly long playtime of teaching videos and heavy student learning tasks. Although courses adopt a "blended learning model," online videos are generally recorded according to a 45-minute classroom schedule, requiring students to invest a lot of time and energy, with heavy learning tasks. Especially in such autonomous learning outside the classroom, long video playback can make students feel bored and unable to concentrate. Also, the uniformity of assignments leads to obvious plagiarism and fails to play its due role. The limited number of online exercises, quizzes, and cases in some chapters forces uniform assignments for all students. For objective questions, the system automatically grades and corrects errors. Students who complete assignments early may not score high but can see the correct answers, allowing later students to use these answers to achieve better scores, contributing to delayed learning progress. For subjective questions, answers are revealed after grading, but students' submissions are similar, and students often ignore the assignments after submission, making text-based guidance and answer explanations meaningless.

Additionally, the implementation of the cross-institutional credit study project demands high requirements for internet and teaching platform applications. Slow internet speed and technical issues with platforms can waste students' time, affecting their learning experience and efficiency. This includes platform adjustments preventing student login, slow video buffering, and functional errors such as inability to submit assignments or completed tasks not being recognized. Furthermore, the current platform service system is not comprehensive enough, especially for courses involving a lot of computational characters and formulas, the platform does not fully cover special characters. In the current model, some special symbols cannot be inputted using the platform's built-in programs, and some special formats are even incompatible, causing some characters in test questions to display incorrectly, limiting student input in online tests and discussions, and dampening their enthusiasm for autonomous learning.

### **4.3. Insufficient Communication and Coordination Between Cross-institutional and Cross-departmental Entities**

The development of cross-institutional credit courses involves agreements between two or more universities for joint teaching and final teaching outcome recognition at the macro level, and coordination of specific courses, textbook versions, teaching progress, and exam formats among multiple departments within a school at the micro level. Currently, the main issue faced by cross-institutional credit study is insufficient communication and coordination between cross-institutional

and cross-departmental entities, especially between the constructing and using institutions. The course system for cross-institutional credit study requires joint construction and continuous updating by both the constructing and using sides. However, differences in selected textbooks and teaching syllabi between the two sides lead to a mismatch between platform resources and offline teaching content, limiting the online video resources and online assignment functions to knowledge expansion. Different textbook selections also lead to inconsistent chapter setups, causing confusion for beginners and weakening the specificity of online tutoring. This also disrupts the original course system and teaching plans of the using side's teachers.

## **5. Measures for Teaching Reform of Cross-institutional Credit Study in Liaoning Province Under the "Internet+" Background**

### **5.1. Stimulate Students' Enthusiasm for Autonomous Learning and Strengthen Online Learning Supervision**

The concept of learning among students directly affects the effectiveness of the transition to new learning modes. In the teaching process of cross-institutional credit courses, teachers should first guide students to establish the concepts of autonomous learning and self-management, and strengthen supervision of students' online learning. At the same time, effective teaching results can only be achieved through appropriate teaching methods. To fully motivate students' initiative and enthusiasm in learning, the following approaches can be taken: First, teachers from the course constructing institutions should communicate with those from the using institutions during the production of online teaching videos to understand the needs of the students. They should focus on applying teaching skills that can vividly and clearly explain the teaching content, distinguishing between key and non-key points, and periodically reviewing knowledge points. Second, before the course starts, teachers can upload related materials and learning requirements to the open learning platform for students to download and study in advance. Third, in offline teaching activities, create educational scenarios that are enlightening, exploratory, and can stimulate students' interest in learning, to fully engage student participation.

### **5.2. Enrich Course Resources and Strengthen the Construction and Maintenance of Online Learning Platforms**

Teaching videos are the primary means for teachers to impart knowledge and for students to acquire it. According to the requirements of cross-institutional credit study, course constructing teachers should strengthen communication with teachers from the using institutions. Both parties should jointly construct the teaching content and course resources for cross-institutional credit study, breaking down each chapter's knowledge points into clear, logical, and concise video content for easy understanding and grasp by students. For instance, teaching videos should be recorded in fragmented formats based on knowledge points, dividing a single content into several small units. Each unit, focused on key knowledge points, should record around 10 minutes of concise micro-videos (the effective time for concentrated attention), reducing cognitive load for students, maintaining attention, and improving learning quality and efficiency. This also facilitates personalized and stratified teaching for different majors and students in the future.

The construction and maintenance of online learning platforms are the premises and foundations for completing cross-institutional credit study. Currently, it's common for universities to use third-party resource sharing course platforms, which often leads to a disconnect between the users and developers of the platform. It is suggested that both institutions involved in cross-institutional study participate directly in the creation of the teaching platform, accompanied by corresponding technical personnel to better serve teachers and students during platform operation.

### **5.3. Establish Communication and Coordination Mechanisms Between Constructing and Using Institutions**

New teaching modes bring new forms of cooperation. For the development of cross-institutional

credit courses, it is necessary for multiple university departments to engage in close communication and collaboration to implement specific teaching measures effectively. Therefore, in the process of reform and practice, universities should strengthen the collaborative capabilities between different departments and establish a scientific and effective cooperation mechanism to promote the orderly progress of cross-institutional study. Constructing and using institutions should actively establish communication channels, jointly completing course registration, supervision of the course teaching process, course grade evaluation, and credit recognition related work. Before the start of cross-institutional credit courses, constructing and using institutions should communicate thoroughly, preferably using the same textbooks, and based on the selected textbooks, compile teaching syllabi, teaching calendars, and specific implementation plans. This facilitates effective linkage between online resources and offline teaching. Teachers from the using institutions should discuss the online teaching content with the constructing team and continuously improve and update the online resources, gradually establishing a comprehensive cross-institutional course system. In terms of assessment methods, they should reflect student-centered principles, with both parties establishing mutual credit recognition standards. Both sides strive to base their assessments on fairness and justice, making assessment methods more scientific, standards more normative, and details more comprehensive, allowing the assessment results to more accurately reflect students' mastery of knowledge.

The implementation of the cross-institutional credit study project in Liaoning Province needs to be guided by the thoughts on Socialism with Chinese Characteristics for a New Era and the spirit of the 20th National Congress of the Communist Party of China. It should implement the new development concept, deepen the reform of talent cultivation models, promote the construction and sharing of first-class courses, and follow the work approach of "based on open courses, promoting resource sharing, reforming teaching methods, and cultivating student capabilities." Relying on the online learning platform for university students, fully utilizing provincial open course resources, and perfecting the management system for students' cross-institutional course study and inter-school credit recognition.

## 6. Conclusion

Under the 'Internet+' context, the cross-institutional credit study project in Liaoning Province has effectively enhanced students' opportunities to access quality educational resources through online platforms. Despite some challenges in student motivation, teaching resources, and platform maintenance, further improvement of the project can be achieved by boosting students' enthusiasm for independent learning, enhancing course resources, and strengthening platform development. The implementation of this project should follow the principles of Socialism with Chinese Characteristics for a New Era, driving reforms in teaching methods and fostering student capabilities.

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