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Research on the course design reform of "Modern Logistics Technology and Equipment" based on AoL of AACSB accreditation

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Abstract: In order to respond to the country's call for education reform and further promote the continuous improvement of the teaching quality of logistics professional courses, this paper constructs the framework of Modern Logistics Technology and Equipment course under the Assurance of Learning (AoL) from the perspective of the accreditation of the Association of Collegiate Schools of Business (AACSB), and finally proposes an improvement plan by setting up course learning objectives and determining the assessment method according to the learning objectives, so as to further form a closed-loop course education, and analyze the implementation process of Modern Logistics Technology and Equipment course reform. Starting from the classroom, we can promote the continuous improvement of the teaching quality of the course.

Keywords: AoL system, Modern Logistics Technology and Equipment, Course reforms.

1. Introduction

The chapter "Building a High-Quality Education System" in the 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-Range Objectives Through the Year 2035 proposes to improve the quality of higher education, build a more diversified higher education system, deepen education reform, and improve the education evaluation system and mechanism. In the deepening reform of higher education, improving teaching quality has become a crucial issue. Therefore, professional accreditation and evaluation are not only very important but also the future development trend. The Opinions of the Ministry of Education on the Undergraduate Teaching Evaluation of Regular Institutions of Higher Education points out that improving the teaching quality of university courses has become the top priority of professional construction and discipline construction. To sustainably elevate teaching quality and optimize students' learning outcomes, business schools across universities are actively pursuing international accreditations as a strategic pathway for quality enhancement. For business schools, the three most influential accreditations are AACSB accreditation, EQUIS accreditation, and AMBA accreditation. AACSB accreditation, launched in 1919, is the oldest and most valuable among the three. With strict accreditation systems and high standards, it is an important symbol that business education has reached world-class levels. Its evaluation emphasizes the performance of business schools in participation, innovation, and influence. That is, through the evaluation process, it improves the quality of business school education, strengthens the interaction between schools, teachers, students, and industries, and promotes education, academic, or professional innovation. To obtain AACSB accreditation, business schools need to conduct comprehensive reviews and continuous improvements in four aspects: strategic goal management, participant management, Assurance of Learning (AoL), and academic and professional engagement. Among them, the AoL system is the essence of the AACSB accreditation process. It takes actual needs as the starting point, is oriented by teaching effects, conducts quantitative evaluations of the teaching process, measures whether teaching effects meet expected goals through a large amount of data, and formulates teaching improvement plans for courses based on this. It is a closed-loop work of continuous improvement based on courses and actual conditions, fundamentally improving the overall teaching quality of the School of Management.

The key to improve teaching quality lies in whether the improvement of teaching quality can enable students to more effectively achieve goals and master professional basic knowledge. This requires continuously improving teaching quality to realize the sustainability of teaching improvement and evaluating teaching effects at the same time. In the logistics management major, the professional course of Modern Logistics Technology and Equipment requires students to understand cutting-edge knowledge and technologies in the logistics field and recognize logistics professional equipment. With the rapid development of science and technology, students also need to keep up with the times, continuously learn, and update their knowledge systems. Therefore, improving the teaching quality of this course is also a top priority. In traditional course teaching, teachers mainly teach based on textbooks, students lack motivation for active learning, and the interaction between teachers and students is not strong. The AoL system is committed to being oriented by teaching effects, focusing on pre-course planning and students' active learning. Students have specific learning objectives during the learning process, and teachers formulate appropriate assessment methods to test students' learning effects, thereby comprehensively improving teaching quality to achieve learning objectives. The introduction of the AoL system into the construction of the professional course of Modern Logistics Technology and Equipment can better realize the learning objectives of logistics management students, promote the improvement of

teaching quality, and cultivate professional talents.

To better carry out education reform on the Modem Logistics Technology and Equipment course, this paper analyzes and summarizes existing scholars' research on education reform. Current research mainly focuses on analyzing the education reform of this major under different backgrounds and the education reform of management majors from the perspective of AACSB. First, scholars analyzed the development trends of the logistics management major against five backdrops: the Outcome-Based Education (OBE) philosophy (Khan et al., 2023 [1]; Song, 2021 [2]), university-enterprise cooperation (Zhu Minjie, 2011 [3]), the Industry 4.0 context (Woschank et al., 2021 [4]), the Industry 5.0 context (Bîzoi et al., 2025 [5]), and the integration of industry and education (Guo Yue'e et al., 2025 [6]; Li Hui et al., 2023 [7]). They also conducted a systematic evaluation of various traditional and modern teaching and learning methodologies applied in industrial logistics engineering education. Furthermore, the research findings indicated that the introduction of the OBE philosophy into logistics teaching processes provides novel insights and approaches for logistics teaching reform and the cultivation of outstanding logistics professionals, and specific models to meet the talent training demands of logistics engineering were proposed. Second, some scholars have explored the application of the Assurance of Learning (AoL) system in educational reforms across other disciplines. They provided detailed guidelines from AACSB on how to conduct course mapping during the AoL process (Xu, 2026 [8]) and ensured the quality of assessment practices within the AOL framework (Lakhal et al., 2015 [9]). The results demonstrated that AACSB accreditation has garnered significant attention from numerous business schools, which have actively leveraged the AoL system to drive teaching reforms. With a focus on teaching effectiveness, these institutions have developed teaching content tailored to students, aiming to cultivate interdisciplinary industry professionals for society. Finally, certain scholars examined the correlation between different learning methods and the successful employment of graduates in the supply chain sector (Malka et al., 2024 [10]), and also explored effective approaches to nurturing green logistics talents in Chinese universities (Jin et al., 2024 [11]). Existing literature on teaching reform shows that course reform can not only improve students' learning enthusiasm and teaching quality but also deliver high-quality talents to the society.

In summary, there are few studies on the Modern Logistics Technology and Equipment discipline in the research on teaching reform, but this course is an important professional course for the logistics management major. The progress of Modern Logistics Technology and Equipment has solved the problems of slow logistics speed, time-consuming and labor-intensive in China's logistics industry, reduced transportation costs, and improved enterprise efficiency. In addition, the improvement of technology and equipment update has made the industry develop rapidly, further improving China's logistics status in the international community. The development of modern logistics technology not only focuses on cutting-edge industry issues but also relates to the development of national people's livelihood. The continuous improvement of the Modern Logistics Technology and Equipment professional course can better cultivate students' professional abilities and deliver professional talents in line with social development to the society. Therefore, it plays an important role in the course education of the logistics major, and the reform of the teaching content of Modern Logistics Technology and Equipment is also necessary for the logistics major. However, this course is in its initial stage and lacks a mature education system, so there are still many problems in the implementation process. Firstly, the lack of specific course objectives in the teaching process makes students less motivated to learn independently and unable to grasp the key points of the course in a timely manner and communicate with teachers. Secondly, the teaching method of this course has always been one-way teaching by teachers, and students lack the exercise of expression ability. Finally, there is a lack of a systematic course system, and it is impossible to establish connections with other courses. Therefore, the course reform of Modern Logistics Technology and Equipment needs to clarify the learning objectives of the course to cultivate students' learning abilities, and at the same time establish a comprehensive course system to form a perfect course map to achieve mutual connections between different courses. At present, most articles on education reform focus on the improvement of course quality and lack research and analysis on logistics professional courses. Therefore, based on the establishment of the AoL system in AACSB accreditation, this paper analyzes the improvement and sustainability of the teaching quality of the Modern Logistics Technology and Equipment course, analyzes how to continuously improve the course, and realizes closed-loop education in the teaching process.

2. AoL Course System Framework

AoL is a set of teaching quality assurance systems designed and operated with the core of evaluating and improving students' learning effects. Its core spirit is performance accountability and continuous improvement. Performance accountability entails assessing students' learning outcomes and leveraging empirical data to verify whether the college's talent cultivation objectives have been fulfilled. Conversely, continuous improvement involves formulating targeted teaching and learning enhancement strategies based on the insights derived from assessment data. All steps of AoL are implemented to achieve these two core spirits. The establishment and operation mechanism of AoL mainly covers the following contents. The specific flow chart is shown in Figure 1.

(1) Formulation of the College's Vision

The college establishes a vision that meets the requirements according to the actual situation. Combined with its own situation, our college has determined the vision of becoming an outstanding business school with balanced development of engineering and management and equal emphasis on teaching and research in China, further clarifying the future training direction.

(2) Establishment of Training Objectives

According to the college's vision, determine the training objectives (Learning Goals, LG) for the abilities required by each major and specific learning objectives (Learning Objects, LO). The learning objectives of Modern Logistics Technology and Equipment are to master basic professional knowledge and cultivate good business communication skills. The corresponding sub-learning objectives require students to master the basic theoretical knowledge of management disciplines and have good oral and written communication skills.

(3) Setting of Course Map

Set the course map (Course Map) for each major according

to the ability training objectives and specific learning objectives. Carry out construction for the overall course; different majors need different courses to enable students to master the required knowledge and professional abilities, so that different majors and grades have complete planning and design.

(4) Formulation of Assessment Standards (Rubrics)

According to the strength of the correlation between each course in the course map and the ability objectives, determine the courses to be assessed by the major and their course assessment plans or standards. For the Modern Logistics Technology and Equipment course, assessment efficacy is measured primarily through student performance metrics: students scoring between 85 and 100 points are first categorized as achieving "excellent" proficiency. For the first training objective, which requires students to master professional basic knowledge, the requirement to achieve this goal is that the excellent rate of assessment scores is higher than 20%. The second training objective requires students to have communication skills, and the requirement to achieve this goal is that the failure rate is lower than 10%.

(5) Determination of Assessment Methods

This course adopts examinations, written reports, and classroom presentations to test students' learning outcomes and ensure that students can achieve the two learning objectives.

(6) Data Collection

Collect relevant test result data and information, and analyze whether students' assessment results meet the standards.

(7) Report Formation

Form a complete report based on the collected data and results, then compare and analyze the analysis report with the formulated assessment standards to find gaps, and finally adjust and improve the course teaching plan and assessment standards in a unified manner based on the college's mission, thus forming a closed loop for the next cycle.

It can be seen that the important principle for AACSB accreditation to evaluate and identify whether a business school's learning program meets the standards is whether it has scientifically established and effectively operated the above logically rigorous AoL driven by mission, performance accountability, and continuous improvement. This system forms a spiral closed-loop upward process starting from the college's mission and returning to it, thereby promoting the continuous improvement of teaching quality and talent training quality. The authority of AACSB accreditation is also fully reflected in the establishment and operation of the logically rigorous and highly operable AoL.

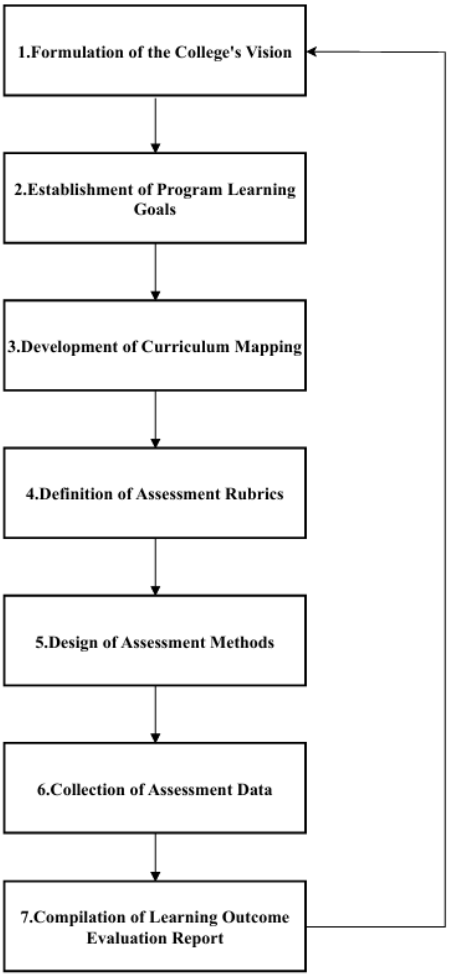

Figure 1. Learning Outcome Assessment Process

3. Analysis of Course Design of Modern Logistics Technology and Equipment

According to the previous discussion and based on the establishment process of the closed-loop AoL system, two specific learning objectives for Modern Logistics Technology and Equipment are established according to the college's vision, namely LO1.1 (students should master the basic theoretical knowledge of management disciplines) and LO6.1 (students should have good oral and written communication skills). An independent AoL assessment process is set up for each objective. Specific correspondences between the program learning goals (LG) and course learning objectives (LO) are detailed in Table 1.

Table 1. Learning Objectives

Knowledge	LG1. Master basic professional knowledge	LO1.1 Students should master the basic theoretical knowledge of management disciplines
Skill	LG6. Have good business communication ability	LO6.1 Students should have good oral and written communication skills

For LO1.1, to better realize students' mastery of the basic knowledge of this course, phased tests and final tests are conducted respectively. In the middle of the semester, an exam mainly consisting of multiple-choice questions is

formulated around the course learning progress to test students' learning effects, collect assessment results, analyze students' mastery of current knowledge, identify problems in the learning process, and continue to improve during teaching to achieve better teaching effects. Similarly, at the end of the semester, a test paper with multiple-choice questions around the knowledge points of the entire course is given to students to answer, collect assessment data, and compare and analyze the two assessment data to evaluate students' learning outcomes and whether they meet the requirements of LO1.1. This closed-loop assessment process for LO1.1 is visually presented in Figure 2.

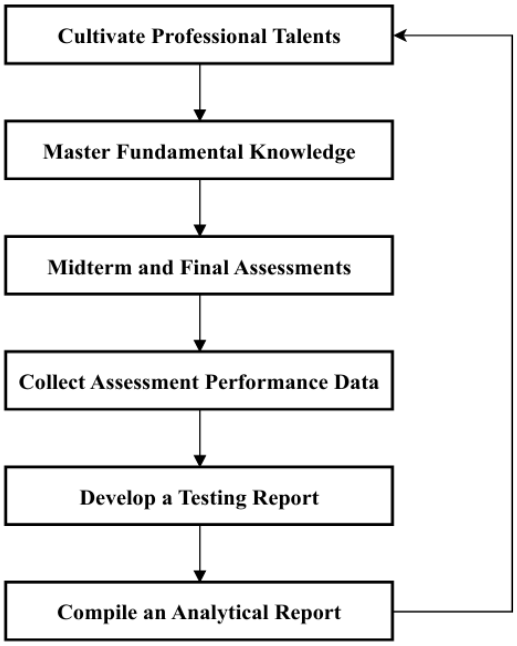

Figure 2. LO1.1 Closed-Loop Process Diagram

For LO6.1, to enable students to have good communication skills and written expression skills, a topic related to contactless delivery is designed in the mid-term of the semester. Students are required to provide solutions for contactless delivery/dispatching of a certain enterprise/certain type of product/certain type of service through data collection, online interviews, discussions, etc., complete the design report in groups, and present their ideas in class to exercise their written and oral expression skills. At the end of the semester, students are required to complete a case analysis on a certain iron and steel group, form a complete paper based on the case analysis, and make a classroom presentation. The design of the final assignment is to enable students to systematically learn and comprehensively master the composition of modern logistics equipment and technologies and the performance of logistics equipment. It enables them to have the ability and quality to reasonably select logistics equipment and design comprehensive solutions according to the operation requirements of the logistics system, and conduct refined management of equipment in logistics operation management. In addition, through understanding the frontier of intelligent and green development of Modem Logistics Technology and Equipment in China, students' desire and confidence to learn professional knowledge well and contribute to the great rejuvenation of the Chinese nation are stimulated. Finally, the scores of the final papers are reviewed to analyze whether students have achieved the learning objectives. The closed-loop cultivation process targeting LO6.1 is depicted in Figure 3.

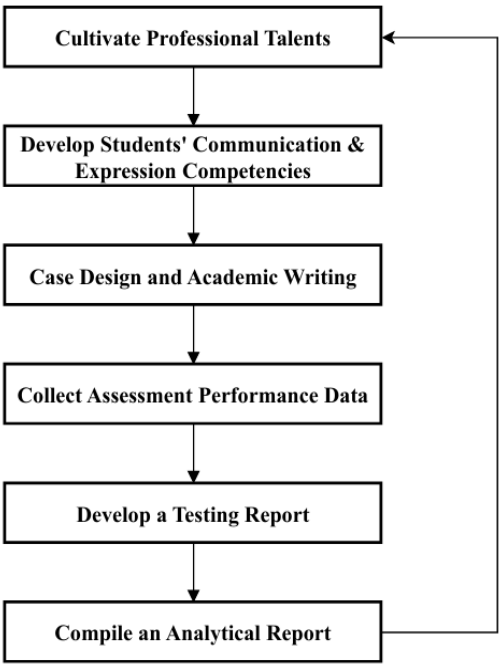

Figure 3. LO6.1 Closed-Loop Process Diagram

For the Modern Logistics Technology and Equipment course, during the teaching process, it is also necessary to strengthen the existing teaching methods for professional basic knowledge, and adopt diversified tests to identify students who have not proficiently mastered professional basic knowledge and take targeted reinforcement measures. At the same time, strengthen the cultivation of communication skills through various forms such as case analysis and writing, group discussions and reports, to further promote the effect of students' completion of learning objectives.

4. Conclusion

The purpose of the School of Management is to cultivate qualified business management talents for the society. How to measure whether undergraduate students' learning outcomes meet social needs and how to continuously improve undergraduate education have become important links in education evaluation. Based on the AoL standards in AACSB international accreditation, this paper designs an assessment mechanism for students' learning effects of the Modem Logistics Technology and Equipment course in the School of Management, making it a closed-loop education, enabling students to have an in-depth understanding of the course and teachers to continuously improve teaching. The implementation results show that the introduction of the AoL system into the Modern Logistics Technology and Equipment course has enabled students to clarify learning objectives, cultivated their communication skills and written expression skills, and through multiple rounds of continuous improvement, involving the modification and improvement of professional objectives and course maps, a long-term mechanism has been maintained. It can be seen that the AoL is a long-term mechanism and systematic project with mission-driven and continuous improvement as the core concepts. Only by fully establishing and effectively operating this system can the talent training and teaching quality of the logistics major be continuously improved.

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