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# Student-Centered, Project-Based, Three-Stage, and Three-Matrix: Innovation and Practice of Teaching Reform in the New Business Curriculum

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**Abstract:** The construction of new liberal arts is important for China's innovative liberal arts education and cultivate applied and versatile talents that meet the requirements of the new era. In order to meet the demand of enterprises for composite talents in the digital economy era when facing new formats and competition, various universities have successively proposed the educational concept of new business education, which aims to be industry-oriented, cross-integrate traditional business with engineering and science, and cultivate interdisciplinary composite talents. This reform is based on the OBE philosophy and PBL teaching method and innovative proposes a three-stage and three-matrix teaching mode, providing ideas for the reform of the new business curriculum in teaching philosophy, teaching quality, teaching structure, teaching mode, and teaching system. In the context of the construction of new liberal arts and new business curricula, new ideas have been proposed to promote the connotative construction of higher education in China.

**Keywords:** New Business Curriculum; OBE Philosophy; PBL Teaching Method; Teaching Reform.

## 1. Research Background

The construction of new liberal arts is important for China's innovative liberal arts education and cultivate applied and versatile talents that meet the requirements of the new era. At the same time, the construction of new liberal arts is also an important measure for relevant departments such as the Ministry of Education to adapt to the development trend of the new era and promote the connotative development of higher education in China. Compared to traditional humanities and social sciences, the biggest characteristic of new liberal arts is its important development path of inheritance and innovation, intersection and integration, collaboration, and sharing. In November 2020, the New Liberal Arts Construction Working Group of the Ministry of Education issued the "Declaration on the Construction of New Liberal Arts", which made a comprehensive deployment of the construction of new liberal arts. It affirmed the important historical significance of the construction of new liberal arts for promoting the innovative development of liberal arts education, building a new pattern of philosophy and social science development centered on education, accelerating the cultivation of talents in the new era, and enhancing the country's cultural soft power, which reflects the strategic intention and practical requirements of the country to accelerate the construction of new liberal arts and sciences [1]. How to continuously explore the practical path of cultivating morality and leading high-quality professional development in a broader perspective of new liberal arts development is a key issue in the current implementation and reform of new liberal arts professional curriculum teaching.

Since the Ministry of Education proposed the construction of the new liberal arts, several educational reform topics have emerged around the disciplinary fields, core attributes, and essential characteristics of the new liberal arts, furthermore, a series of pioneering and speculative research have been carried out. Ma & Li (2020) believe that the internal integration and intersection of humanities and science in the new liberal arts perspective are effective ways to understand, study, and solve complex problems in society [2]; Fan (2020), starting from the new development situation at home and abroad, believes that the word “new” in the new liberal arts includes the following four aspects: the new technological revolution and the integration of liberal arts, the new global pattern and internationalization of liberal arts, the new historical nodes and new missions of liberal arts, and the new era and sinicization of liberal arts [3]; Xu (2021) proposed the concept of "Three Integration" from the perspective of inclusiveness to explain the new liberal arts, namely the integration of humanities and social sciences, integration of Chinese and Western cultures, and integration of knowledge and action [4]. The scholars above have paid attention to the timeliness, innovation, and integration of the new liberal arts from different perspectives, which is conducive to deepening the understanding and comprehension of the construction of the new liberal arts. From an educational perspective, in the context of the new liberal arts, universities should strive to strengthen the authentic connection between objective reality, promote the comprehensive development of students, reflect a comprehensive and integrated understanding of the origin of world development, as well as a profound understanding of the comprehensiveness, profundity, and complexity of human beings.

In order to meet the demand of enterprises for composite talents in the digital economy era when facing new formats and competition, various universities have successively proposed the educational concept of new business education, which aims to be industry-oriented, cross-integrate traditional business with engineering and science, and cultivate interdisciplinary composite talents. Luo & Peng (2023) believe that the new business studies is essentially a disciplinary restructuring of traditional business studies, utilizing cross-border thinking to apply new concepts, models, and methods to business education, in order to connect with the new economy and new business [5]. This reform will improve the teaching and learning methods, integrate internal

and external resources of the education system, design reform plans systematically, and collaborate to promote teaching reform, thereby enhancing the subject teaching ability of teachers and the core literacy of students, and providing replicable paradigms and strategies for promoting classroom teaching reform on a larger scale. How to improve the quality of undergraduate education, implement the student-centered educational philosophy, and construct a new liberal arts curriculum teaching model with "high order", "innovation", and "challenge" has become the primary problem faced by higher education in China.

# 2. Research Theoretical Foundations

## 2.1. OBE Philosophy

The OBE (Outcome-based Education) concept was proposed by American scholar Spady in the 1990s [6]. This philosophy is a teaching concept that aims to ensure the quality of higher education in the United States. It proposes that teaching should focus on organizing and improving course content and teaching work around established goal results, and student-centered, output-oriented, and continuously improving the teaching process based on output results and changes in the internal and external environment are the core of OBE [7]. There are many differences between the OBE teaching model and traditional teaching methods, with the former focusing more on students and their growth [8]. The curriculum teaching mode under this concept generally includes four stages: goal setting, teaching content, teaching process, and evaluation method setting, and all stages should be guided by the result of OBE [9]. This concept has become a mainstream educational concept on a global scale since its inception. China became a member of the Washington Accord in 2016, which not only enhances the recognition of undergraduate education in the international community but also enhances the competitiveness of undergraduate graduates in the international job market. As a result, many universities in China have implemented teaching reforms for undergraduate courses to enhance their social and adaptability [6][10].

Luo & Peng (2023) summarized previous research and found that the effective implementation of the OBE philosophy in university teaching requires the design of teaching content, teaching process, and teaching evaluation [5]. Davis & Winch (2015) proposed that the teaching content should be tailored to the curriculum objectives, dividing the course content into four categories: Factual knowledge based on facts and rules, conceptual knowledge based on relationships and principles, procedural knowledge based on processes and methods, and meta knowledge based on knowledge cognition. Then, all knowledge is modularized and reorganized [11]. Yang et al. (2022) found through research that in the teaching process, unlike the traditional "content-based" one-way output teaching method of "teacher speaking, student listening", the OBE concept often introduces interactive, hybrid, and open classroom teaching methods, which focus more on improving student participation in the teaching process and guiding the cultivation of students' ability to think independently and solve problems [12]. Teaching evaluation is the key to achieving continuous improvement in teaching content and processes in the OBE philosophy. Xie (2022) found in practice that a more comprehensive and diversified assessment and evaluation mechanism is adopted in curriculum teaching, and based on the principles of top-down and reverse design, the teaching content and process are adjusted in stages according to the evaluation results so that students can achieve the predetermined goals in learning [13].

## 2.2. PBL Teaching Method

PBL (Problem-Based Learning) is an educational model first proposed by McMaster University in Canada in the 1960s. Initially, it was mainly applied in medical teaching reform, and later widely applied in various fields of education reform. The main content is to use relevant questions, under the guidance of teachers, with students as the core, and using methods such as stimulating students' learning interest, increasing student participation, and teacher-student interaction, to improve their thinking ability and problem-solving ability [14]. The PBL teaching model is based on constructivist learning theory, emphasizing the diversity of problem-solving, situational, autonomous, exploratory, cooperative, reflective, and evaluative aspects [15]. This teaching model advocates for students to learn independently and actively participate, which can mobilize their initiative, creativity, and enthusiasm for learning. Students become the "leading role" of learning activities, and teachers become the "supporting role", realizing the transposition of teachers' roles, which is conducive to strengthening the cultivation of students' self-learning ability and innovation ability, and realizing the student-centered education concept. The traditional education model treats students as passive recipients, knowledge is static, and teachers are the absolute authority of the classroom. This teaching mode cannot cultivate students' critical spirit and independent thinking ability. Compared with traditional teaching methods, PBL focuses more on cultivating students' self-learning abilities. By designing various teaching activities, such as group cooperation, it guides students to find solutions to problems on their own, internalizes the knowledge they have learned, and gradually cultivates their ability for self-learning and lifelong learning [16].

There are four steps of the basic program of PBL.

Step 1, Prepare Questions. Teachers should be fully familiar with the teaching content before class and prepare questions based on the teaching content. This step not only familiarizes teachers with the teaching content and better understands the situation of students, but also serves as the foundation for successfully implementing problem-driven teaching methods [17].

Step 2, Analyze the Problem. Teachers guide students to independently analyze and solve problems. Students solve problems together through various classroom activities, such as group discussions, inter-group debates, and in-class speeches, but teachers need to ensure that each student can provide their own opinions. The main role of teachers at this stage is to raise questions, guide students to discuss the issues and provide timely evaluation and feedback.

Step 3, Solve the Problem. Ask students to propose solutions to the problem.

Step 4, Result Evaluation. Teachers organize students to conduct self-evaluation, group evaluation, teacher evaluation, etc. Based on the characteristics and teaching steps of the PBL teaching mode, this teaching method can improve students' classroom participation, cultivate their critical thinking, provide students with an open, relaxed, and inclusive learning environment, and establish their autonomy in learning [16].

# 3. Problems in Traditional Business Curriculum Teaching

In response to the requirements for the construction of a standardized business curriculum, this teaching reform deeply explores the following issues from five aspects: teaching philosophy, course quality, course structure, teaching mode, and course system.

**Problem 1:** Teaching Philosophy - Lack of High-level Curriculum Objectives

In the construction of traditional business studies, the teaching philosophy often focuses on conveying core knowledge theory and basic practical skills, lacking the cultivation of high-level qualities such as student values, innovative spirit, international perspective, and critical thinking. At the same time, it is difficult to implement the student-centered and demand-oriented approaches proposed in the curriculum design in real teaching practice.

**Problem 2:** Teaching Quality - Lack of Systematic Curriculum Ideology and Teaching Evaluation System

In the construction of traditional business studies, the value elements in the curriculum are separated from ideological and political courses. Values or ideological and political elements are added abruptly in some teaching processes, making it difficult to propose a curriculum ideological and political system between and within courses based on course quality goals. Students find it difficult to empathize, and the guiding effect of values is not good. In addition, the evaluation of student learning quality is often completed by the teacher alone, and the evaluation is mostly based on final exams, stage assignments, and even attendance. These one-sided and subjective data cannot provide an objective evaluation of the effectiveness of student self-directed learning and classroom activities.

**Problem 3:** Teaching Content - Lack of Cross-Integration Between Courses and Disciplines

The content of business studies is complex, and the courses are closely related and cross-disciplinary. Teachers often only focus on one course during the teaching process, ignoring the repetition and progression between courses and disciplines. Members of the research group often receive feedback on "repetitive learning content" and "fragmented curriculum design" during discussions with students and graduate feedback surveys, highlighting the urgency of breaking down barriers and integrating systems between courses and disciplines.

**Problem 4:** Teaching Mode - Lack of Systematic Application of Student-centered Teaching Mode and Teaching Methods

Faced with an endless variety of teaching methods and models, traditional business education still adopts a teacher-centered "transmission-acceptance" approach in the teaching process, rather than a student-centered "guidance-discovery" approach. Moreover, even if some courses begin to adopt modern teaching methods such as flipped classrooms, they only stay in classroom teaching of some chapters, and even only stay in educational reform plans. Without systematic design, they cannot truly be implemented.

**Problem 5:** Teaching System - Lack of Innovative System with Chinese Characteristics that Adapts to Times Changes

The traditional business education system mainly focuses on the knowledge transmission level of advanced Western economic management theories and technologies, lacking the national confidence and new-era characteristics of modern China in planning development and reform, participating in competition and governance on the world stage. It is urgent to transform into a curriculum construction and teaching system with Chinese characteristics to achieve support for national strategy, educational development, and talent cultivation.

# 4. Teaching Reform Plan for the New Business Curriculum

## 4.1. Reform Objectives

Based on the existing problems mentioned above, the overall reform goal of this project is to take business majors and courses as specific implementation objects, adhere to the student-centered concept of OBE, create a new business classroom teaching mode of "three stages and three matrices" through PBL teaching method, reasonably position teaching objectives, teaching content, and evaluation standards at various levels, improve the achievement of talent cultivation, especially cultivate students to master the core knowledge and basic skills of new business, And the ability to apply interdisciplinary knowledge to solve complex problems and critical thinking.

## 4.2. Specific Reform Plan

### 4.2.1. Implement the "Student-Centered" Teaching Philosophy and Clarify the Three-Stage Teaching Objectives

Firstly, emphasize the student-centered teaching philosophy, driven by "learning", and break it down into four steps that cycle back and forth.

Step 1: "Learning new knowledge", which means that teachers guide students to master new knowledge;

Step 2: "Learning and practicing", which refers to the combination of learning and practicing through in-class and out-of-class exercises, allowing students to truly master the knowledge they have learned;

Step 3: "Learning and Application", through the learning projects set in the curriculum, students can achieve practical application of theory in practice;

Step 4: "Learning and Asking". Students are able to initiate thinking based on the content they have learned, raise derivative questions, and expand their learning with new content, achieving a closed learning loop.

At the same time, teachers need to clarify three changes, namely: from the traditional "protagonist" in teaching to the "chief in equality", from the "traditional knowledge transmitter" to the modern "student development promoter", from "subject-oriented" to "student development-oriented", to always put students in the first place in the process of teaching reform. Subsequently, the curriculum should adhere to the OBE education philosophy, conduct research on current students, recent graduates, past graduates, and employers, and analyze the talent training objectives, curriculum outline, and teaching objectives in reverse according to the actual needs of each major. The curriculum objectives should be decomposed into three stages, namely: knowledge objectives, ability objectives, and quality objectives, reflecting the "higher order" of the curriculum.

Thus, Problem 1: the lack of high-level curriculum objectives, has been solved. The requirements of the new business curriculum teaching philosophy, student-centered and demand-oriented, have been met.

#### 4.2.2. Use the PBL Project Teaching Method to Reorganize the Learning Project Matrix

Based on the three stages of pre-class, in-class, and post-class, this teaching reform refines the learning tasks for students and the guidance tasks for teachers and proposes a "three-stage" teaching model as the basis for subsequent teaching reforms. In the pre-class stage, teachers need to develop teaching plans, develop online micro-course resources, build online learning platforms, assign student learning-mission lists, and then publish teaching resources on the course teaching platform to complete course development. Afterward, upon receiving reminders that learning resources have been released, students will engage in self-directed personalized learning according to their learning missions, including self-learning micro course resources, completing online self-testing, recording learning difficulties, and doubts, completing self-directed collaborative inquiry learning, and completing pre-class learning missions. The teaching and learning activities in the pre-class stage, with the help of the online teaching platform, have completed the basic knowledge preparation and knowledge transfer in the early stage of the course.

The second stage, which is offline classroom teaching, aims to enable students to collaborate and explore learning under the guidance and personalized guidance of teachers and complete the internal transformation of knowledge. Firstly, students report on their pre-class learning progress and completion of their pre-class mission, and teachers conduct acceptance, Q&A, and evaluation; Then, through teacher-inspired in the classroom, students complete the learning of new knowledge. Next, the teacher proposes new learning activities and guides students to explore independently and collaboratively. During this period, students can engage in various forms of activities such as literature review, group discussions, self-evaluation, and peer evaluation to complete the learning tasks. Finally, the teacher assigns multi-level and difficult post-class review and preview tasks to prepare for the next stage.

In the third stage, which is the post-class stage, students achieve targeted-learning through various forms such as summarizing the learning content in class, reflecting on the shortcomings in the learning process, completing online after-class exercises and tests, self-learning supplementary materials, completing expansion tasks, and exchanging and sharing in the discussion area of the course teaching platform, thereby completing knowledge expansion. Teachers complete teaching evaluation, reflection, and resource supplementation through teaching activities in the previous stage and interactive Q&A with students after class, achieving the sublimation of the curriculum and ultimately achieving the teaching objectives.

Afterward, the learning content was divided based on the "three-stage" teaching objectives and the "three-stage" teaching model. Then, based on the knowledge learned in the pre-class, subsequent courses, and related professional courses of this course, a research group is established to jointly discuss and break down barriers between courses and even disciplines, and the knowledge is reorganized. Subsequently, based on the PBL teaching method, the learning content is project-based and decomposed into pre-class learning missions, in-class learning activities, and post-class learning tasks, establishing a "learning project matrix".

At this point, through the setting of the "three-stage" teaching mode, as well as the first matrix - the "learning project matrix", Problem 3: Lack of Cross-Integration Between Courses and Disciplines, has been solved. The requirements of a new teaching structure for the new business curriculum, broken down disciplinary barriers, and expanded knowledge through cross-integration, have been met. At the same time, it also solves Problem 4: Lack of Systematic Application of Student-centered Teaching Mode and Teaching Methods, which meets the requirements of the new business course teaching model, can stimulate student enthusiasm, and effectively transform and upgrade the course.

#### 4.2.3. Transform the Perspective of Ideological and Political Elements and Reset the Matrix of Ideological and Political Elements

In response to the problem of insufficient depth in ideological and political elements, teachers should analyze and select the project points in the "learning project matrix" based on the socialist core values, from the perspective of students, combined with hot current events related to the curriculum, and then enrich the ideological and political case studies in the curriculum. Then, combined with the "three-stage" teaching model and based on the PBL teaching method, a second matrix, the "ideological and political element matrix" is established with the project as the outline. In this way, students have been guided to form the correct values, achieve "moistening things silently", and achieve a high level of curriculum teaching.

#### 4.2.4. Enriching Project Evaluation Elements and Reshaping Project Evaluation Matrix

The course will adopt a multidimensional evaluation method, including students conducting self-learning, self-testing, and self-evaluation online in the pre-class stage; inter-group self-evaluation and group-evaluation conducted in class; In the post-class stage, students conduct evaluations on group assignments, while teachers evaluate student group assignments, individual bonus assignments, and final exams. The evaluation time covers all three stages; the evaluation subjects include students and teachers; the evaluation methods include self-evaluation, intra-group evaluation, inter-group evaluation, and teacher evaluation; the evaluation objects include various forms such as testing, assignments, discussions, reports, debates, etc. The above evaluation system conducts multidimensional evaluations of students from theoretical, practical, and comprehensive aspects, with clear objectives, comprehensive indicators, reasonable weights, and clear standards. Therefore, combining with the "three-stage" teaching model and PBL teaching method, the third four-dimensional matrix, the "project evaluation matrix", is established, which can scientifically reflect the overall learning effectiveness of students and the achievement of teaching objectives, while encouraging students to actively participate in course learning.

The above two matrices have solved Problem 2 raised in the previous chapter, which is the lack of systematic curriculum ideology and teaching evaluation system, achieving the requirements of new quality teaching in the new business curriculum, strengthening value guidance, and improving teaching effectiveness.

At this point, the teaching reform of various professional courses in "New Business Studies" will form an innovative teaching model of "student-centered, project-based, three stages and three matrices", thereby effectively achieving the goal of talent cultivation. This innovative teaching model solves Problem 5: Lack of Innovative System with Chinese Characteristics that Adapts to Times Changes, achieving the

goal of a new teaching system for business courses, and creating a new business course with Chinese characteristics that can shoulder the mission of the times in universities.

# 5. Conclusion

This reform is based on the OBE philosophy and PBL teaching method and innovatively proposes a three-stage and three-matrix teaching mode, providing ideas for the reform of the new business curriculum in teaching philosophy, teaching quality, teaching structure, teaching mode, and teaching system. This reform breaks the traditional classroom content and paradigm, reconstructs the teaching objectives of the new business course, and constructs a teaching content system centered on economic and management disciplines, integrating literature, science, engineering, and other humanities and social sciences. As a result, the core competencies of students are enhanced, providing replicable paradigms and strategies for promoting classroom teaching reform on a larger scale. In the context of the construction of new liberal arts and new business curricula, new ideas have been proposed to promote the connotative construction of higher education in China.

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