

Teaching Paradigm Reform of Economic and Management Courses Based on the Integration of OBE Concept and PAD Mode

Liyan Liu, Yang Li*

School of Economics and Management, Beijing Institute of Petrochemical Technology, Beijing, China
Email: *liyngbd@bipt.edu.cn

How to cite this paper: Liu, L. Y., & Li, Y. (2022). Teaching Paradigm Reform of Economic and Management Courses Based on the Integration of OBE Concept and PAD Mode. *Advances in Applied Sociology*, 12, 470-483.

<https://doi.org/10.4236/aasoci.2022.129036>

Received: June 6, 2022

Accepted: September 17, 2022

Published: September 20, 2022

Copyright © 2022 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

“Student-centered” reform of teaching methods, curriculum systems, and assessment systems, and the cultivation of high-level applied talents have become the core content of higher education reform in the new development stage. The traditional economic and management courses teaching method has considerably limited effect on stimulating students’ curiosity, improving independent-learning ability, cultivating innovation consciousness, and promoting practical ability. The research explores the “student-centered” teaching paradigm reform that integrates the OBE concept and the PAD mode from the aspect of teaching plan, teaching framework, teaching objectives, teaching mode, assessment methods, and puts forward suggestions on implementing (presents) the paradigm integrating OBE concept and PAD mode.

Keywords

Student-Centered Teaching Reform, Economics and Management Courses, OBE Concept, PAD Mode

1. Introduction

In 2017, the general office of the CPC Central Committee and the general office of the State Council issued “the Opinions on Deepening the Reform of the Education System and Mechanism”, which clearly pointed out that colleges and universities should focus on “cultivating innovative, compound and applied talents that meet the needs of society”. In September 2018, the Ministry of Education issued the opinions on accelerating the construction of high-level undergraduate education and comprehensively improving the ability of talent training,

*Corresponding author.

requiring that undergraduate education should “focus on student development and promote learning revolution through teaching reform”. In October 2019, “the opinions on deepening undergraduate education and teaching reform and comprehensively improving the quality of talent training” issued by the Ministry of Education put forward targeted Guidance Opinions on strengthening the overall design of the curriculum system and improving the assessment and evaluation mechanism, and clarified the core content of the teaching reform. The reform of teaching methods, curriculum system and assessment system centered on students has become the core content of higher education reform in the new development stage.

With the continuous improvement of China’s global economic status and the continuous deepening of China’s economic reform, compound talents with both professional knowledge of economic management and proficient foreign language skills have become the main demand of the market today. In the future, the national demand for talents with comprehensive economic management ability will continue to grow, and there will be a tendency to move closer to the central and western regions. From the current employment market demand, the demand of enterprises for economic management talents is large and mainly distributed in some basic posts, which have certain technical and professional characteristics. However, the economic management course itself is closely related to the real economy and business practice. If only teachers teach and students mechanically memorize, the economic management knowledge and skills will always be “on paper” and cannot be really applied to practice (Sun et al., 2022).

At the same time, with the rapid development of network technology, the form of economic management has changed greatly, and online transactions impact the traditional business model. Under the background of China’s “Internet +” and “artificial intelligence” era, the cultivation of advanced, compound and applied economic management talents has become an inevitable trend of the cultivation of economic management talents. In addition, the epidemic and network technology have also impacted the classroom teaching of traditional economic management courses. The mode of teaching mainly by teachers, supplemented by case analysis and project design can obviously not meet the market requirements of current management talents. Economics and management courses should be based on “output” and “learning effect” to design new models that can better help students learn effectively. Outcome Based Education (OBE), also known as ability-oriented education or demand-oriented education, was proposed by American scholar Spady in 1981. The concept of OBE has been incorporated into the framework of the Washington Agreement, and has now become the review and evaluation standard in the field of engineering education professional certification and the Association to Advance Collegiate Schools of Business (AACBS) business professional certification. In June 2016, China joined the Washington Agreement and became the 18th member state. The concept of OBE education was officially introduced into China, becoming an

important way for China's higher education to integrate with the international community. The Presentation Assimilation Discussion (PAD) teaching mode clearly divides classroom teaching into three links: teaching, internalization, and discussion. Half of the classroom time is allocated to teachers and half to students (Zhang, 2014). This teaching mode integrates teaching method and discussion method to cultivate students' critical thinking, creative thinking, communication ability, cooperation ability and other core qualities. It not only emphasizes the indispensable guiding role of teachers, but also gives full play to students' initiative and changes passive learning into active learning. Now, the information-based education era, which breaks through the time and space constraints, provides a variety of possibilities for the application of OBE and pad concepts in curriculum reform.

Based on the concepts of OBE and PAD, this research will explore the reform of student-centered teaching mode of economic management courses in the new period through the reverse design of output oriented courses and the teaching mode of split classes, build a new starting point for the teaching reform of applied professional courses of economic management in the new development stage, deepen the training of high-level applied talents, and provide reference for the comprehensive reform of "student-centered" of similar courses. The rest of the research is organized as follows: II. Literature Review; III. The issues of traditional Teaching Mode; IV. Teaching Paradigm Reform Based OBE and PAD Concept; V. Conclusions.

2. Literature Review

The student-centered education and teaching reform is the trend and requirement of the connotation development of higher education in the new development stage, and is also an important way for colleges and universities to cultivate high-quality applied talents. In recent years, colleges and universities around the world have made great efforts to build the "student-centered" education concept and achieved good results, providing a good reference model for teaching reform in the new development stage.

In 1952, the famous psychologist Carl Rogers first proposed the student-centered education concept in the academic seminar on how classroom education affects human behavior held by Harvard University. In 1972 and 1996, UNESCO published "learning to survive" and "Learning: internal wealth" respectively, which promoted the student-centered education concept and "student-centered" became the mainstream education concept in the 21st century (Ding et al., 2019).

Based on the student-centered education concept, Spady (1994) proposed the OBE concept, to focus and organize the education system clearly around everything necessary for students to succeed at the end of learning. OBE concept has three major characteristics: achievement oriented, student centered and continuous improvement (Gao, 2022).

The concept of OBE was initially only applied in the field of engineering education. At the end of the 20th century, it began to become the mainstream mode in the field of basic education reform in the United States and Australia. OBE has now become an educational paradigm highly recognized by higher education around the world (Li & Tan, 2017). Based on the OBE model, the United States, Britain, Germany, and other countries have infiltrated the concept of “student-centered” into all educational levels of student education, and defined the characteristics of achievement oriented, student-centered, and continuous improvement of OBE concept from the aspects of syllabus, curriculum teaching, effectiveness evaluation and Practice (Li et al., 2020).

The OBE model originated from the United States has attracted much attention in China. Compared with the traditional education concept in China, the biggest feature of this model is “emphasizing ability training and ability training” (Su & Li, 2018). Based on the concept of “student-centered” OBE, Professor Zhang Xuexin of Fudan University put forward the theory of PAD in 2014 (Zhang, 2014). The core concept of this theory considers the two concepts of “student-centered” and “Teacher centered”. It defines classroom teaching as paying equal attention to teachers’ teaching and students’ autonomous learning (Wang, 2021). By redefining the classroom and reshaping the teacher-student relationship, it integrates the advantages of many teaching methods such as flipped classroom, autonomous classroom, efficient classroom, project-based teaching, and case teaching (Sun, 2022). Pad theory assessment focuses on process evaluation. The concept of OBE is student-centered, focusing on students’ harvest and changes in their ability structure; Pad mode transforms students from knowledge receivers to knowledge and ability presenters, and enhances independent knowledge construction (Qiu, 2016). Both are teaching objectives and teaching means. They are student-centered and pay attention to the diversity of process assessment and achievement evaluation. The integration of the two can be said to complement each other and complement each other.

The outbreak of COVID-19 in 2020 poses a new challenge to the reform of “student-centered” teaching mode in China, and the concept of “online teaching” came into being. In the post epidemic era, the traditional offline learning combined with online learning, and the student-centered hybrid teaching mode has become an exploration direction of “student-centered” teaching reform through offline support for online and online expansion of offline, and complementary characteristics and advantages (Wu et al., 2018).

The mixed classroom teaching integrating the OBE concept and PAD concept is just in line with the teaching concept needs of the connotation development stage of higher education in China in the post epidemic period, and meets the requirements of the new development stage of economic and management courses for the cultivation of high-quality and application-oriented international business communication talents. In order to systematically implement the “student-centered” education concept, integrate the OBE teaching concept and PAD

teaching mode, and integrate the mixed teaching mode of online and offline teaching advantages, carry out systematic and comprehensive reform from three aspects of teaching content, teaching methods and teaching assessment.

3. The Issues of Traditional Teaching of Economic and Management Courses

It is an important content of new liberal arts education to carry out teaching paradigm reform with “student development as the center”. Teachers are required to closely follow the development requirements of the times, adjust the traditional classroom teaching paradigm in a timely manner, carry out curriculum design based on the principle of consistency, cultivate the teaching concept and teaching practice of “student development as the center”, improve students’ learning experience, promote the implementation of effective teaching methods, pay attention to the cultivation of students’ learning ability, Realize the common progress of “teaching” and “learning”.

From history perspective, there are two teaching paradigms. One is the knowledge transfer paradigm centered on “teachers, textbooks and classrooms”. This teaching paradigm emphasizes the important role of teachers in the process of knowledge and skills transfer and has played an important role in the history of world education for a long time; the other is the knowledge teaching paradigm centered on the cultivation of students’ interests and potential exploration. This teaching paradigm emphasizes that students are oriented and promotes students to carry out meaningful learning. Teachers play an auxiliary role in this process. For a long time, undergraduate teaching has constructed a set of “knowledge teaching paradigm” based on teaching. This set of paradigms is centered on “teachers and books, focusing on the transfer of knowledge and skills”, centering on fixed teaching materials, and taking teaching as the means, and finally investigating the mastery of knowledge points. The whole process focuses on the infusion of knowledge rather than the cultivation of students’ abilities. This kind of teaching paradigm has the following characteristics: it adopts the reserved course, takes teaching as the main teaching method, assigns the same homework to all students, adopts the unified standard for course assessment, and takes the score as the only standard to measure the learning effect of students. Teachers are the disseminators of knowledge, and students are only the receivers of knowledge; it emphasizes the authority of teachers and books, and the analysis of students’ learning situation is insufficient, resulting in students’ lack of learning motivation and interest, insufficient learning initiative, insufficient learning input and poor learning effect. There are mainly three problems in this teaching paradigm:

- 1) The foundation of students needs to be improved. As a professional course, intelligent control requires students to have a certain mathematical and professional foundation. The intelligent control courses offered in the undergraduate stage are basically offered in the senior year, and most of them are senior stu-

dents. In the first three-year, students have completed the study of professional basic courses and have the learning ability of intelligent control courses. However, fuzzy mathematics, operations research, optimization theory, neural network theory and other courses involve many abstract mathematical concepts and theories. Many students find it difficult to apply these abstruse and abstract mathematical theories with complicated formula derivation to the field of intelligent control. In addition, the intelligent control course is highly theoretical, and the learning efficiency of students can be significantly improved by analyzing and solving the control system with the help of simulation software, which puts forward higher requirements for students to have control system simulation ability and general software programming ability.

2) Emphasis on theory, light on practice. As mentioned above, the intelligent control teaching content is abstract, the theory is profound, and there are many knowledge points. For teachers, how to explain the theoretical system clearly, systematically, and comprehensively, and deduce complicated formulas in a compact and orderly manner has been a great challenge. In the case of limited class hours, it is easy to pay insufficient attention to the cultivation of students' innovative and practical abilities. At the same time, intelligent control practice has the characteristics of strong comprehensiveness and great difficulty. In the current situation that the class hours of professional courses are getting shorter and the simulation foundation of students needs to be improved, in order to ensure the smooth development of the teaching content, the practice links and proportions must be compressed and weakened. This kind of teaching situation, which emphasizes theory and neglects practice, is difficult for students to quickly grasp systematic knowledge and realize the practical application of theoretical content.

3) The assessment method is unreasonable. At present, the economic and management courses mostly take examinations as the main assessment method. However, examination is not the most suitable assessment method for economic and management courses. At present, most of the economic management courses take examinations as the main assessment method. However, examination is not the most suitable assessment method for economic management courses. First, the course objectives of economic management courses are to solve practical problems in economic management with theoretical knowledge and applied theoretical knowledge. In order to meet the above objectives and requirements, the examination link must be mainly designed questions or comprehensive questions, and the examination time is limited. Such designed questions or comprehensive questions are difficult to cover all or most of the theoretical and practical methods. Second, even if the course objectives are divided into small knowledge points, it cannot support all the contents of the examination. Therefore, taking the examination as the assessment link is easy to become a simple memorization of abstract concepts and a mechanical copy of abstract structures, which cannot assess the students' ability to grasp the actual know-

ledge.

The foundation of students, the less emphasis on practice and the unreasonable assessment method are the major issues of traditional teaching paradigm. In addition, under the traditional teaching paradigm of “teachers, textbooks and classrooms as the center”, the limited class arrangement, modular teaching methods, rigid curriculum structure and single assessment methods are increasingly difficult to meet the needs of students’ absorption and mastery of knowledge, and it is difficult to cultivate talents that meet the needs of economic and social development. The core of talent training in colleges and universities is to teach students how to learn, adjust their own knowledge structure according to the development and changes of economic society, and integrate their own knowledge system for innovation according to the needs. In this context, the “student centered” teaching paradigm began to be pursued.

4. Teaching Paradigm Reform of Economic and Management Courses Based on OBE-PAD Concept

Based on the current theory and practice of OBE teaching concept and PAD teaching mode, we proposed a teaching paradigm reform of economic and management courses based on the integration of the two modes, which is the outcome-oriented PAD teaching mode, OBE-PAD mode.

4.1. Teaching Reform Plan

Based on the OBE concept and PAD mode, with the training of high-quality and application-oriented international business communication talents as the achievement orientation, and determine the training objectives of the courses according to the requirements of the technical field and professional positions of international business communication talents. According to the level and type of vocational ability objectives, following the basic law of students’ learning ability training, based on the real work tasks and their working process, involving typical situations, typical projects and learning practice tasks, and using the student-centered classroom interaction methods such as flipped classroom, “teaching” and “learning” interaction and online platform, to cultivate international business communication talents with good professional skills and innovation ability. The idea of the reform scheme is shown in **Figure 1**.

As shown in **Figure 1**, the reform will be focused on the four aspects:

Teaching objectives: in line with the OBE concept and PAD mode, with the training of high-quality and application-oriented international business communication talents as the result orientation, the “Trinity” teaching objectives integrating professional knowledge teaching, practical ability training and core values shaping are set.

Teaching mode: integrating OBE concept and PAD mode, building a “split class” teaching mode integrating online and offline advantages, and forming an interactive teaching and learning mode.

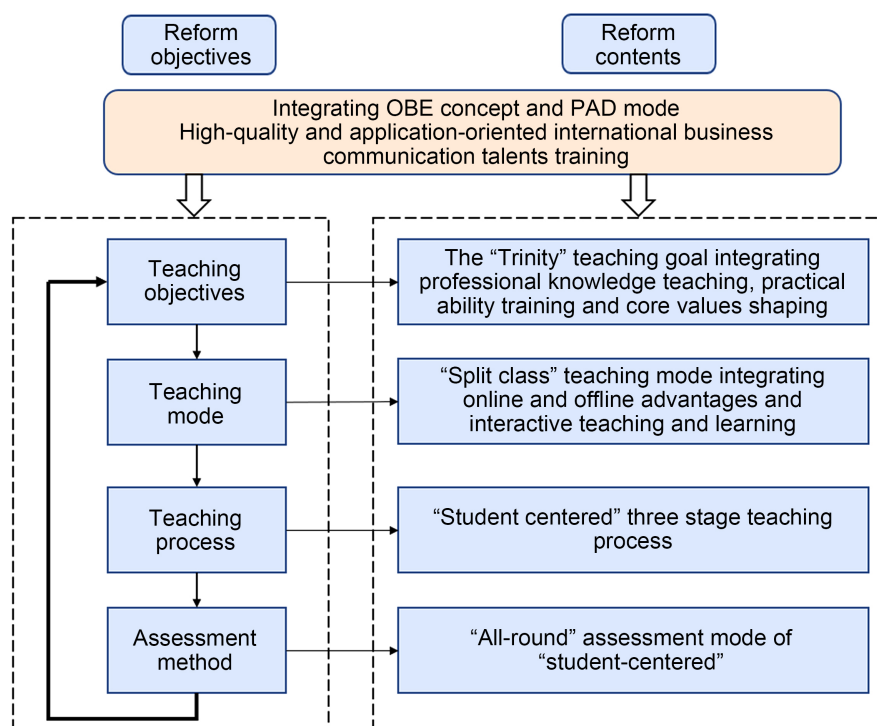


Figure 1. Correspondence between project reform objectives and reform contents.

Teaching process: Taking the cultivation of high-quality and application-oriented international business communication talents as the result orientation, a “Three-stage” teaching process with “students as the center” is formed.

Assessment method: docking the course objectives, integrating the OBE concept and PAD mode, and establishing a “student-centered” comprehensive assessment method.

4.2. Teaching Reform Framework

Taking the cultivation of high-quality and application-oriented international business communication talents as the achievement orientation, integrating the OBE concept and PAD mode, combining the advantages of online and offline teaching modes, we will carry out systematic teaching reform practice from four aspects: teaching objectives, teaching modes, teaching processes and assessment methods. The specific reform framework and ideas are shown in **Figure 2**.

4.3. Reform of Teaching Objectives

Guided by the outcome of the training of high-quality and application-oriented economics and management talents, the reform of teaching objectives should first focus on the market demand of high-quality and application-oriented economic and management talents in the new development stage, then combine the professional training objectives with the graduation requirements of students, integrating the OBE concept and pad concept, reorganize and reconstructs the teaching objectives of the “international business communication” course, and

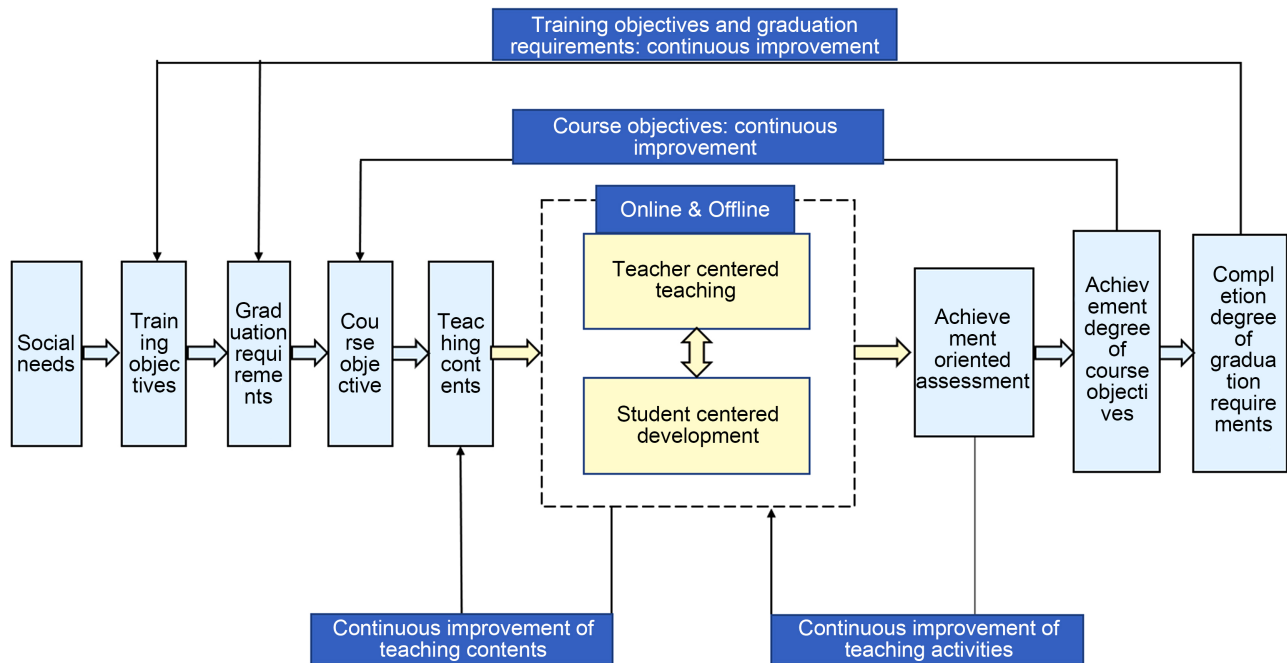


Figure 2. Student centered teaching reform framework of economic management courses integrating the concepts of OBE concept and PAD mode.

finally form three-level course sub-objectives, and form a set of professional knowledge teaching, practical ability training Core values shape “Trinity” teaching objectives:

- 1) Basic objectives: imparting theories and professional knowledge of economic and management courses;
- 2) Advanced Objective: to cultivate the professional ability of economic and management courses, including professional ability, professional skills, autonomous learning ability and the ability to solve practical problems by applying the learned theories;
- 3) Deep level objective: shaping the core values of economic management courses, including international vision, moral quality, ideological and political connotation, and innovation consciousness.

According to the “Trinity” teaching objective, the teaching documents such as the curriculum outline, curriculum teaching plan and teaching calendar are rearranged. The teaching documents should reflect the requirements of the “Trinity” teaching objective.

4.4. Teaching Mode Reform

As for the teaching reform mode, based on the “student-centered” concept and the “half class” concept of PAD, the overall teaching is divided into teacher centered teaching part and the student-centered expansion part, integrating online and offline advantages, forming a “student-centered” hybrid teaching mode integrating the concepts of OBE and PAD.

The traditional teaching of economic and management courses, due to the

dryness of theoretical teaching, leads to the low enthusiasm and interaction of students, and it is difficult to achieve the expectations in the promotion of practical ability and the cultivation of core values. The “student-centered” teaching mode integrating the concepts of OBE and PAD focuses on highlighting the real needs of students. All curriculum links are designed based on the training needs of students’ practical knowledge, abilities, and values. The classroom is divided into two parts: Teachers’ teaching and students’ practical development. Diversified teaching methods are adopted to substitute students into the real workplace environment through various situations, projects, and roles. At the same time, Connect the knowledge points between each unit and within each unit, effectively stimulate students’ learning interest and self-learning consciousness, and imperceptibly improve students’ practical ability and shape core values through various environments.

1) Teacher centered teaching link: teachers are responsible for the construction of the theoretical system of each teaching unit, so that students can master the basic ideas, knowledge structure and basic skills in international business communication of each unit, and lay a solid knowledge and theoretical foundation for students’ follow-up practice.

2) Student centered development link: create a “student centered” learning environment for students, and cultivate students’ problem awareness, independent learning awareness, innovation awareness, ideological and political connotation and core values through scenario simulation, discussion, and completion of individual and group tasks.

3) Diversified student development practice methods: adopt diversified teaching methods such as role-playing method, project teaching method, situational teaching method and trade transaction experience method, and substitute students into the import and export trade link, project investigation and report analysis, demonstration link, daily international business communication link and international business copy creation link in the real international business communication, Connect the knowledge points of the unit in series.

4) Hybrid teaching mode with complementary advantages: combining the characteristics and advantages of online and offline teaching, online classroom combines with network teaching platform, and cloud class and other platforms are used to arrange self-study tasks and analyze the data of students’ practical results, to strengthen students’ independent learning ability and improve their ability to solve problems independently and innovate.

4.5. Teaching Process Reform

Integrate the OBE concept and PAD mode to build a “Three-stage” teaching process of “student-centered” interaction between teaching and learning before, during and after class. Guided by the students’ learning results and based on the students’ learning needs, through the interaction between teaching and learning in the three links of pre-class, in-class and after-class, we can accurately grasp

the dynamics of students' independent learning and improve the teaching effect. In the pre-class stage, teachers analyze the effect of students' self-regulated learning before class through the platform data, and adjust the theoretical system construction and key and difficult points setting of the in class stage; during the class, the task setting is adjusted through the completion of the students' expanded tasks, and continuous improvement is made to imperceptibly improve the students' independent learning ability and innovation ability, shape the students' core values, and adjust the arrangement of independent learning tasks after class based on the completion of the students' expanded tasks; After class, the teacher adjusts and sets the pre class autonomous learning task of the next unit through the analysis of relevant data on the completion of the students' autonomous learning task after class. The whole teaching process forms a closed-loop form of "student-centered" and realizes the continuous improvement of "student-centered" (See **Figure 3**).

1) Pre-class link: Based on the achievement orientation, teachers push autonomous learning tasks through "cloud class" and other teaching platforms to stimulate students' interest in learning, and test the effect of students' autonomous learning through platform data. Students complete the task of autonomous learning and feed back to teachers through the platform, providing guidance for teachers' classroom teaching design.

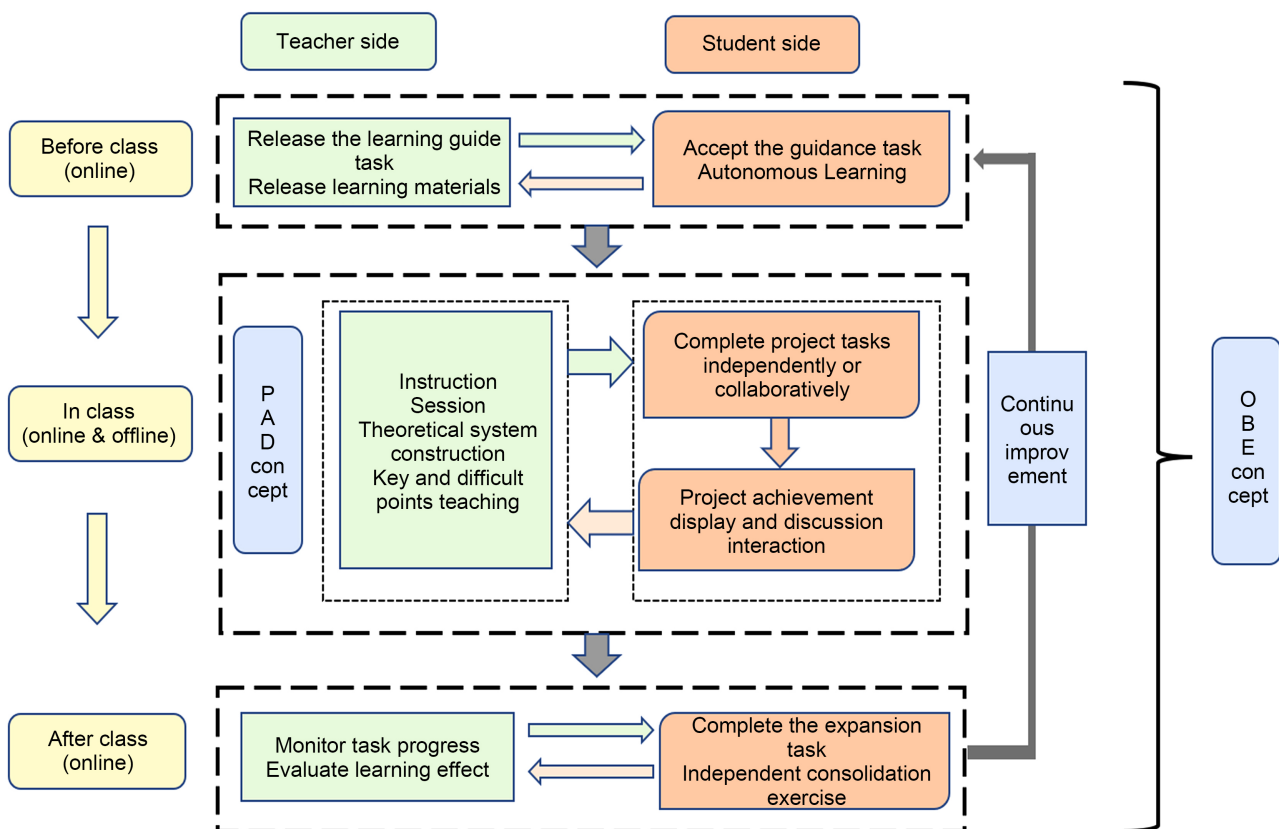


Figure 3. Teaching process design of "student-centered" economic and management courses integrating the concepts of OBE and PAD.

2) In-class links: Based on the data analysis of students' self-study results, explain the key and difficult problems in combination with specific examples, and send classroom practice tasks through the teaching platform to scientifically guide students to actively learn and transition to the student development link; Based on the content explained by the teachers, the students complete the practical tasks of classroom business communication (role-playing tasks, project completion tasks, situation simulation tasks, trade transaction experience tasks, etc.), complete the letter writing, project investigation and report analysis, demonstration, daily international business communication copy creation, etc. in the real international business communication, and cultivate the students' practical ability, independent learning ability Innovation ability and core values. Through the display, discussion and communication of the task results, the students will feed back the results of the expanded task to the teachers.

3) After-class link: according to the feedback of students' expansion task, teachers push corresponding independent learning assignments on the teaching platform to consolidate practice. Students discuss through WeChat groups or communicate directly with teachers. Through platform data or direct communication, teachers can accurately grasp the consolidation of students' knowledge and the completion of independent learning assignments, conduct teaching reflection and summary, and provide basis for continuous improvement of classroom teaching.

4.6. Reform of Assessment Methods

Design the "all-round" assessment system with "student-centered", set the teaching objectives according to the results orientation, build the assessment system according to the teaching objectives, and form the coupling and interaction mechanism between the "student-centered" curriculum objectives and the assessment system.

By means of investigation, interview and data collection, the curriculum objectives of "student-centered" at three levels of professional knowledge, practical ability and core values are determined with the guidance of students' post requirements and the development of students as the center; at the same time, the assessment standards are aligned with the curriculum objectives. The assessment contents adhere to the "student-centered" principle. At ordinary times, independent learning and final assessment are equally important. The assessment results provide a basis for the continuous improvement of the next round of curriculum objectives, and realize the coupling interaction between the "student-centered" curriculum objectives and the assessment system.

At the same time, the assessment pays attention to the process performance of students, and increases the proportion of assignment of ordinary scores, with ordinary scores and final scores accounting for 50% respectively. At ordinary times, we pay attention to the independent learning before and after class, and at the same time, we focus on the practical development of the links in class. The

final examination sets examination questions for the curriculum objectives of professional knowledge, practical ability, and core values. The examination results promote the continuous improvement of the next round of teaching, and the examination methods interact with the curriculum objectives.

5. Conclusion

“Taking students’ development as the center” is the core aim of new liberal arts education. Teachers are the key to the reform of higher education in China. We should establish the new liberal arts construction concept of “student development as the center”, scientifically design the curriculum, pay attention to the scientificity, integrity and consistency of the curriculum design objectives, process and evaluation, and change from passive teaching based on teaching to all-round active teaching based on teaching, experience and reflection; at the same time, we should pay attention to the deep integration of information technology and curriculum design, comprehensively guide students to carry out meaningful learning, and strengthen the overall synergy of curriculum design and pay attention to the cultivation of students’ action ability.

Based on the analysis of the main problems in the teaching of economic and management courses, this paper puts forward an intelligent control course teaching mode integrating the concepts of OBE and pad, and forms three major teaching activity links: Teacher centered teaching link, student centered expansion link, and achievement-oriented assessment link. It is also used to refine the course objectives, innovate the teaching link, and integrate the actual project cases into the teaching practice. In the future, the liberal arts construction of China’s higher education should aim at improving the quality of talents, and take the cultivation of talents as an important evaluation index for the effectiveness of the new liberal arts construction. The teaching paradigm reform of “student development as the center” will certainly become an important direction of China’s higher education reform. The reform of higher education needs not only the guidance of advanced education concepts, but also the support of successful teaching experience. In the future, the innovation of talent training mode in the field of liberal arts education in China also needs the continuous exploration of front-line teachers in classroom teaching.

Supporting Projects

1) Key Project of Education Reform of Beijing Institute of Petrochemical Technology: “Student-centered” Teaching Reform of “International Business Correspondence” Course Based on the Integration of OBE Concept and PAD Mode (ZDXSZX202204003);

2) Education Reform Project of Beijing Institute of Petrochemical Technology: Research and Practice on Talent Training System of “Cross-Boundary Integration” for Applied Undergraduate Economics and Management Majors under the New Liberal Arts Background (YB202204002).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Ding, F., & Huang, L. T. (2019). Analysis and Enlightenment of Student-Centered Education Concept in Foreign Universities. *Contemporary Educational Practice and Teaching Research*, *No. 19*, 90-92.
- Gao, Z. R. (2022). Research and Practice of Curriculum Assessment System Based on OBE Concept. *Computer Age*, *No. 2*, 107-110.
- Li, J., & Tan, Y. (2017). Application of Achievement-Oriented Education in the Cultivation of Core Competence of Law Students. *Journal of Liaoning University of Technology (Social Science Edition)*, *19*, 120-122.
- Li, Y. F., Pan, X. O., & Wang, E. F. (2020). Exploration and Practice of Chain Mixed Teaching under OBE Education Concept. *Heilongjiang Education (Theory and Practice)*, *No. 11*, 73-75.
- Qiu, A. M. (2016). The Concept and Practice of "Split Class" Teaching Mode. *Journal of Guangdong University of Foreign Studies*, *27*, 140-144.
- Spady, W. G. (1994). *Outcome-Based Education: Critical Issues and Answers*. American Association of School Administrators.
- Su, P., & Li, M. (2018). Constructing the Teaching and Evaluation System of General Education Based on the OBE Concept: Taking Tsinghua University as an Example. *Research on Higher Engineering Education*, *No. 2*, 129-135.
- Sun, C. M., Du, H. M., Li, X., & Shi, Y. H. (2022). Research on Teaching Mode of Intelligent Control Course Integrating OBE and PAD Concepts. *Research on Higher Engineering Education*, *No. 1*, 157-162.
- Wang, Q. (2021). Exploration of Online and Offline Mixed Teaching Practice Based on "Student Centered": Taking Journalism as an Example. *Education and Scientific Research*, *No. 11*, 41-43.
- Wu, S. H., Yue, D. L., & Li, Q. (2018). Exploration and Practice of Student-Centered Multi Mixed Curriculum Teaching Mode. *China Geological Education*, *27*, 77-81.
- Zhang, X. X. (2014). Split Class: A New Exploration of College Classroom Teaching Reform. *Fudan Education Forum*, *12*, 5-9.