

Design and Practice of “Student-Centered” Teaching Method Based on OBE Concept: The Case of Theory and Practice of Cross-Border E-Commerce Course

Yan Han, Liyan Liu*

School of Economics and Management, Beijing Institute of Petrochemical Technology, Beijing, China

Email: *lucyliuliyuan@bipt.edu.cn

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Abstract

This research develops a “student-centered” teaching method based on the OBE education concept by examining and assessing students’ learning characteristics, knowledge needs, and work requirements of companies. The Theory and Practice of Cross-Border E-Commerce course’s teaching practice shows that the “student-centered” teaching method built on the OBE concept can successfully pique students’ interest in learning, increase the effectiveness of teaching, and boost students’ practical skills, all of which contribute to the development of high-level, application-focused cross-border e-commerce talents.

Keywords

OBE, Student-Centered, Teaching Method, Cross-Border E-Commerce

1. Introduction

The necessity for workers with strong business acumen and foreign language abilities has grown significantly in today’s labor market as China’s global economic standing continues to increase and the “One Belt, One Road” building is underway (Wang, 2022). According to the current labor market, there is a high need for cross-border e-commerce professionals in companies engaged in international trade. These jobs tend to be fundamentally technical and professional. The real economy and international trade are major themes in the course Theory and Practice of Cross-border E-commerce. Foreign trade knowledge and abilities will

*Corresponding author.

never be applied in practice if teachers simply educate, and students only memorize.

The international commerce model has altered significantly due to the current rapid growth of network technology, and online transactions are having an impact on the conventional import and export industry. Cross-border e-commerce fragments sales diversify modes of transportation, and uses electronic settlement, the size of its transactions keeps growing, as does its share in import and export trade. In 2020, China's cross-border e-commerce market size reached 12.5 trillion yuan, an increase of 19.04% over the previous year, and accounting for 38.86% of China's total import and export value of trade in goods.

Nevertheless, due to the rapid development of the cross-border e-commerce industry and fierce competition, there is a severe lack of composite foreign trade talents who have both the comprehensive ability of traditional foreign trade business and the ability to operate the emerging e-commerce platform (Hu, 2016). In addition to the diversified requirements of foreign languages brought by the emergence of a large number of emerging economies and the comprehensive requirements of negotiation skills brought by online transactions, the complicated operating technology and transaction rules of e-commerce trading platforms, as well as cross-border logistics, overseas warehouse delivery and other new cross-border e-commerce derivative businesses, all pose serious challenges to practitioners (Hu, 2017). For university education, this means that we should cultivate the "new business + foreign language" or "new technology + foreign trade" talents that companies urgently need.

The teaching in classrooms has also been impacted by network technologies. In order to meet the demands for students with broad knowledge and foreign trade firms with high requirements for business skills, the teacher-lecture-based mode is not sufficient. The reform of cross-border e-commerce curricula should understand the interdisciplinary core competence requirements of cross-border e-commerce talents in all aspects and try to break free from the constraints of traditional education mode in today's increasingly complex trade environment and rapid development of network technology. Based on "output" and "learning effect", we should discover a new teaching approach that can transcend discipline boundaries and cultivate the comprehensive ability of diversified talents, so as to realize the effective cultivation of new composite talents.

The Outcomes-Based Education (OBE), a model of education based on learning outputs, originated in the United States and first proposed by Spady (1994), implies that the educational system must be firmly organized and focused on everything required for students to succeed when completing their education. Subsequently, Acharya (2003) proposed four components for carrying out the OBE concept: Defining, realizing, evaluating, and using. Initially applied only to the field of engineering education, this model quickly gained popularity in the 1990s in the context of basic education reform in the United States and Australia. It has since been adopted by a number of other nations and is now regarded as a standard model for international education (Li & Tan, 2017). The primary

difference between OBE model and conventional Chinese educational philosophy is the emphasis on training for competence and ability (Wang et al., 2009). In China, the OBE model has been introduced in Hong Kong and Taiwan at the beginning of the 21st century, and it was then attempted to be implemented in mainland China's reform of engineering education around 2009 (Wang et al., 2018), after which the OBE education concept has gained more and more clout and been gradually acknowledged by the Chinese higher education community.

The OBE model focuses on the utility of education and the significance of educational outcomes, and places great emphasis on the assessment of student learning outcomes, achieving a fundamental shift in the educational paradigm from "content-based" to "student-centered". Meanwhile, "Theory and Practice of Cross-border E-Commerce" course also pursues utility and places a strong emphasis on the development of employability. More significant than teachers finishing textbook lectures are students' comprehension of the theory of cross-border e-commerce, their matching of abilities to practical elements, and whether they can develop into qualified foreign trade talents. The information technology education era, which transcends physical and temporal boundaries, offers a variety of opportunities for educational reform using the OBE concept. Therefore, based on the OBE concept, the enhancement of Theory and Practice of Cross-Border E-Commerce in the new environment is investigated in this research using the reverse design of an output-oriented curriculum, which is critical for improving the learning effect and job matching of students.

2. Teaching Design Based on OBE Concept

Based on the OBE concept, we select the course material taking into consideration both the occupational qualification norms and the employment requirements for cross-border e-commerce positions. According to the levels and types of occupational competence objectives, we follow the basic rules of cultivating students' learning ability, integrate and optimize teaching contents based on real work tasks and their work processes, design typical projects and learning tasks step by step, and use student-centered classroom interaction methods such as flipped classroom, case study, group projects and teacher questions to cultivate cross-border e-commerce talents with good occupational skills and innovation ability.

In the process of implementation, we explored a series of feasible "output-oriented and student-centered" teaching programs based on the actual teaching situation of international economics and trade majors, and the correspondence between the objectives and programs is shown in **Figure 1**.

2.1. Student Characteristics and Company Needs

First, we conducted a survey on students' learning characteristics and learning needs through questionnaires and interviews in order to understand students' preparatory knowledge, learning characteristics and learning needs. 109 juniors studying international economics and trade at the School of Economics and

Management filled out the surveys. According to our analysis of the survey data, only 2.75% of the students have never heard of the “student-centered” teaching idea, while 68.81% of the students are very familiar with it.

In terms of learning characteristics, 49.54% of students had little understanding of cross-border e-commerce, 3.67% have worked in the field, and 59.5 percent have used cross-border e-commerce platforms for shopping. However, only 66.06% of students are aware of the distinction between traditional and cross-border e-commerce. Students are more familiar with Alibaba International Station than they are with Wish platform among the many cross-border e-commerce platforms (Figure 2). Additionally, 88.08% of students believe the course is beneficial to their major, 87.15% of students would actively consider providing answers during class, and 80.74% of students are very engaged in the subject.

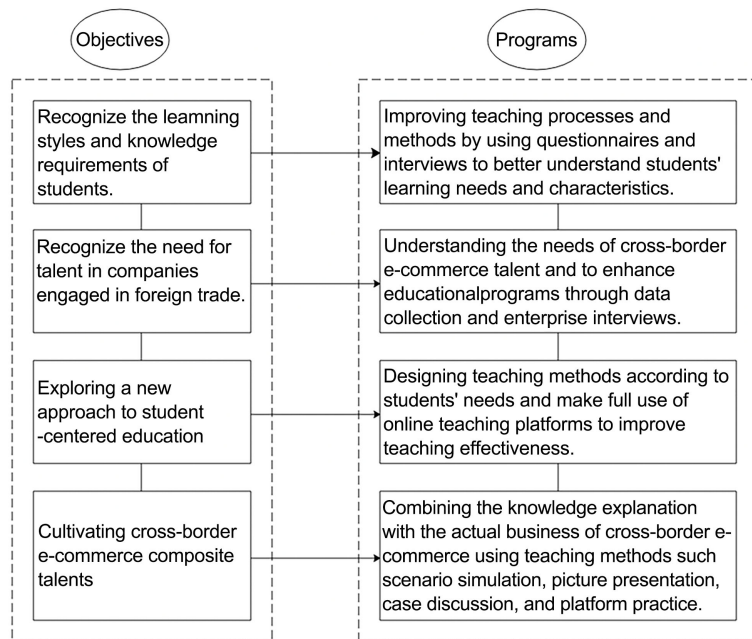


Figure 1. Correspondence between teaching objectives and programs.

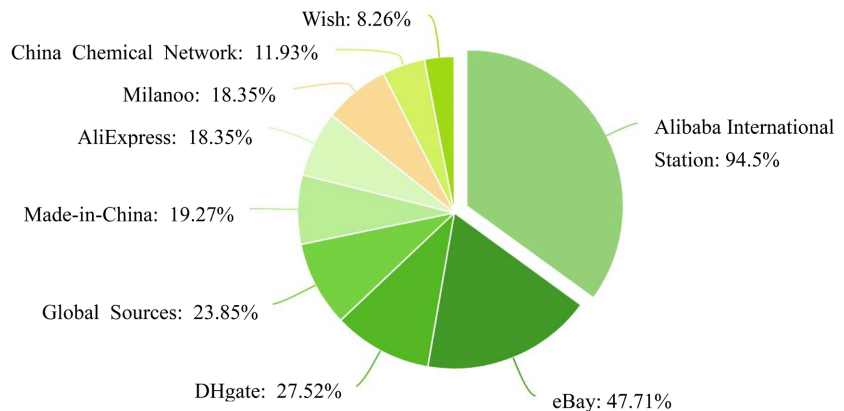


Figure 2. Students' knowledge of cross-border e-commerce platforms.

In terms of learning needs, 93.58% of students want to improve their practical ability in cross-border e-commerce, and 65.14% of students plan to engage in cross-border e-commerce or foreign trade-related work in the future. Classroom lectures, case studies, and simulated practical exercises are the three teaching techniques that students consider to be the most effective (Figure 3). Additionally, more than 50% of students think that the more challenging aspects of the course are shipping disputes, product release and optimization, and product selection and accounting.

Secondly, we analyzed the demand of cross-border e-commerce enterprises by collecting information. Among the core positions of foreign trade, cross-border e-commerce operation is in the stage of rapid growth of talent demand and lack of supply. According to the “2021 Foreign Trade Industry Talent Situation Research Report” released by WisdomLink Recruitment, in the first quarter of 2021, the scale of cross-border e-commerce operation recruitment demand surged 190.9% year-on-year. Small and medium-sized businesses with fewer than 500 employees have emerged as the dominant force in the recruitment of cross-border e-commerce operation talent, and these businesses have set higher standards for the platform operation, data analysis, e-commerce management, supply chain management, and English communication skills of cross-border e-commerce talent.

In order to create a course teaching system that is more in line with the actual demands, we integrate the learning characteristics of the students as revealed by the questionnaire survey and interview with the most recent information in this specialty, cases, and the real needs of enterprises. In classroom teaching, various advanced teaching methods are organically integrated to improve the teaching effectiveness.

2.2. Student-Centered Teaching Mode

We design the teaching mode according to students’ learning characteristics and learning needs, and make full use of the online teaching platform to improve the teaching effect, such as general knowledge of cross-border e-commerce business,

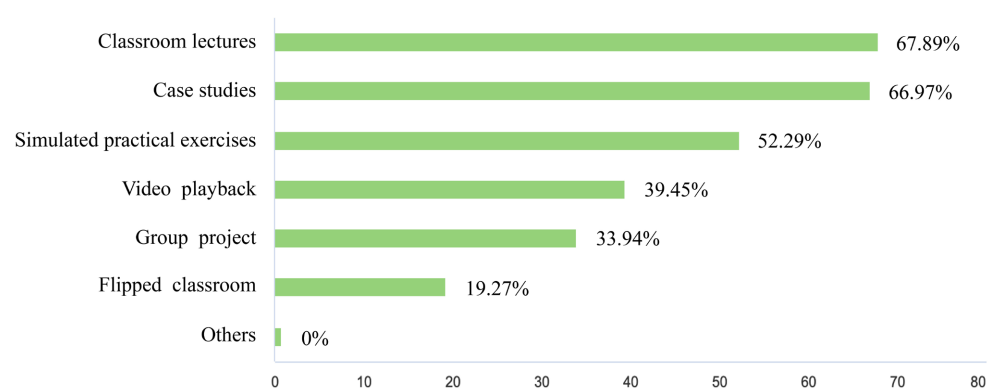


Figure 3. Students’ ranking of the effectiveness of teaching methods.

simple case analysis and single competency training are based on online learning, and important and difficult business knowledge, complex case analysis and comprehensive competency training are based on offline. At the same time, auxiliary teaching activities based on the online teaching platform are carried out. The course system of “Theory and Practice of Cross-border E-Commerce” is explored with the business process of cross-border e-commerce as the main line, business ability training as the characteristic and information technology as the support.

2.3. Coordinated Development of Students’ Knowledge, Skill and Quality

To achieve the coordinated development of students’ practical knowledge, ability, and quality in foreign trade, we integrate cross-border e-commerce knowledge transmission, business practical ability development, and professional comprehensive quality education. We adopt teaching methods such as scene simulation, picture display, case discussion and platform practice to combine the knowledge lecture with the actual business of cross-border e-commerce. For instance, group simulation approach is used to teach students cross-border e-commerce communication. Students take on the roles of importers, exporters, and overseas clients to experience the viewpoints of each party under various disagreement circumstances and learn how to handle disputes appropriately. Actual business cases and business scene displays help students develop their sense of scene while they study about cross-border e-commerce logistics. Students are free to choose products and create copy on their own while learning how to submit products for cross-border e-commerce. Students practice and gain experience to gradually develop their professional skill and professionalism using a variety of educational methods and approaches.

3. Teaching Practice of Theory and Practice of Cross-Border E-Commerce Based on OBE Concept

The Theory and Practice of Cross-border E-Commerce is a compulsory course for international economics and trade majors, and it is a course opened to meet the rapid development of cross-border e-commerce. While disseminating basic knowledge and cultivating basic skills, the course summarizes the latest practice of China’s cross-border e-commerce development and discusses theoretical development trends. Through the course, students can not only master the basic theoretical knowledge of cross-border e-commerce, initially have the basic skills to carry out the practical operation of cross-border e-commerce, but also enable students to understand the professional ethics required for engaging in cross-border e-commerce positions. The course can also help students develop a sense of national pride and the qualities of honesty and trustworthiness, lead them to develop a strong sense of national self-confidence, and enhance their overall well-being.

3.1. Objectives of Theory and Practice of Cross-Border E-Commerce Course

The design of the teaching program is based on the course objectives for cross-border e-commerce theory and practice. The objectives of the cross-border e-commerce course comprise the following three aspects in accordance with the training program and graduation criteria for international economics and trade major.

1) Master the fundamental theories behind international e-commerce. List the primary cross-border e-commerce channels, determine whether cross-border e-commerce behavior complies with domestic and international laws and regulations, describe the features and applicable guidelines of each cross-border e-commerce platform, be familiar with the fundamentals of cross-border e-commerce selection, pricing, publishing, marketing and promotion, and risk control links, and be able to use the knowledge to address issues that come up in international e-commerce.

2) Have the basic practice skills of cross-border e-commerce. Be able to use the common network communication tools for business contacts, use relevant software for picture and document processing, and complete the on-line operation of the cross-border e-commerce platform for store opening and decoration, product management, order management, cross-border marketing and customer service.

3) Have the basic professional quality of cross-border e-commerce operations. Be able to demonstrate a certain level of scientific culture, outstanding professional ethics and craftsmanship, compliance with industry laws and regulations, team spirit, an understanding of the characteristics of customers in various countries, the ability to tolerate, comprehend, and the ability to use English for business communication, as well as the ability to deal with a variety of buyer behaviors.

The correspondence between the course objectives and the index points of graduation requirements is shown in **Table 1**.

Table 1. Achievement matrix of graduation requirement indicators.

Graduation Requirements	Graduation Indicators	Course Objectives	Weight Coefficient of This Course
2. Expertise	Indicator 2-2: Recognize the established conventions and laws governing international trade, and settle disagreements and issues in the area of international trade and commerce.	Course Objective 1	10%
3. Business Operation	Indicator 3-1: Be familiar with import and export business processes, and master the basic skills to engage in import and export business activities.	Course Objective 2	10%
5. Business Communication	Indicator 5-2: Be able to communicate effectively with international clients.	Course Objective 3	10%
8. Social Responsibility	Indicator 8-2: Be able to assume corresponding social responsibilities and obligations, and to comply with professional ethics and norms in international trade and economic activities.	Course Objective 3	10%

3.2. Teaching Practice of Theory and Practice of Cross-Border E-Commerce Course

The course Theory and Practice of Cross-border E-Commerce involves both theoretical knowledge and practical business aspects of cross-border e-commerce. We design the course around the objectives of the course and adopt output-oriented teaching to match the course content with the job requirements of enterprises, covering various aspects of cross-border e-commerce such as product selection and pricing, product release, optimization, marketing and risk control. In order to give students a general understanding of the concept, mode, development trend and characteristics of each platform of cross-border e-commerce, and to master the practical skills of each aspect of cross-border e-commerce, the course is divided into two parts: theoretical teaching and simulation training, based on the mastery of theoretical knowledge, and consolidation of relevant knowledge through business process simulation to improve the skills of practice.

3.2.1. Theory Teaching: Course Objective Oriented

1) Overview of cross-border e-commerce. To enable students to understand the concept, characteristics and development history of cross-border e-commerce, and master the main modes of cross-border e-commerce and related laws and regulations.

2) Cross-border e-commerce platforms. Introduce the characteristics and operations of major cross-border e-commerce B2B, B2C and integrated service platforms. To enable students to master the classification of cross-border e-commerce platforms, understand the characteristics of each cross-border e-commerce platform, be able to choose the appropriate cross-border e-commerce platform according to their own characteristics and commodity features, complete account registration in each cross-border e-commerce platform, and master the rules and basic operations of each platform.

3) Cross-border e-commerce product selection and commodity pricing. Focus on the factors and considerations of cross-border e-commerce product selection, classification and methods of product selection, methods of source selection, product quality control measures and product pricing strategies. Students will have the ability to select products according to the target market, master how to find stable sources for the products and be able to set profitable prices for the selected products.

4) Cross-border e-commerce commodity publishing and optimization. Introduce the key points and misunderstandings in the process of publishing goods on cross-border e-commerce platforms, methods of optimizing goods, planning of copywriting and tools for decorating stores. To equip students with the ability to organize product packages and publish products on different platforms, and to use various methods to optimize products, write copy, and decorate stores.

5) Cross-border E-commerce Marketing. Introduce how to use search engines to understand overseas markets, grasp industry and product data, analyze com-

petitors and find potential buyers. Explain brand positioning, identification, promotion, strategy, maintenance and renewal, and common types of marketing activities in brand marketing. Enable students to independently conduct overseas customer searches, analyze overseas customer demand characteristics and carry out store marketing activities.

6) Cross-border e-commerce risk control. To introduce cross-border e-commerce payment and logistics methods and the risk points in them. Make students familiar with the risks in the process of cross-border e-commerce payment and logistics, and form the awareness of comprehensive risk control.

7) Cross-border e-commerce practice skills. Introduce the job settings and professionalism of cross-border e-commerce companies, the working skills of cross-border e-commerce customer service, the use of network communication tools and the common business English expressions in cross-border e-commerce. To enable students to master the basic practice quality requirements of cross-border e-commerce, be able to use Skype and WhatsApp software proficiently, be able to use business English to communicate with customers, and understand the business etiquette of various countries.

3.2.2. Simulation Practical Training: Professional Skills Oriented

Students will use the “Basic Exercise” and “Practical Training Operation” modules in the “CBEC Comprehensive Practical Training Software” to simulate the key steps in cross-border e-commerce transactions once they have mastered the fundamental theoretical knowledge and operation through the sub-module learning of cross-border e-commerce. The “Basic Practice” and “Practice Operation” modules of the “CBEC Cross-border E-commerce Comprehensive Training Software” are used to simulate the key steps in cross-border e-commerce transactions after the students have mastered the fundamental theoretical knowledge and operation. The major cross-border e-commerce platforms’ operational mode, transaction process, marketable products, buyer distribution, and prohibited products, as well as cross-border market culture, cross-border e-commerce marketing, cross-border customer service, and other aspects and fundamental operational processes, are all made available to students in a highly simulated environment. In order to lay the groundwork for future employment, the “CBEC Comprehensive Practical Training Module” enables students to simulate the entire business process of B2B cross-border e-commerce export, B2C cross-border e-commerce export, and cross-border e-commerce import. Students also get to experience the fun of success and the risk of failure of real cross-border e-commerce operation.

3.2.3. Team Entrepreneurship Training: Employment Needs Oriented

Cross-border e-commerce companies are looking for individuals with a variety of skills, including not just technical ones but also personal traits, teamwork prowess, and professional ethics. Students establish teams to replicate the process of cross-border e-commerce entrepreneurship, build collaboration skills in

competition, and enhance communication and decision-making abilities on the basis of theoretical learning and practical training. Students are given group assignments in the first class to help them develop, adapt, and improve their entrepreneurial plans while engaging in theoretical learning and hands-on training, ultimately resulting in the formation of a team entrepreneurial plan. The last class is focused on reporting and defense. Topics covered include company introduction, job setting and assignment, platform selection and justification for cross-border e-commerce, as well as methods for product price, release, marketing, promotion, and risk management. Voting and scoring are conducted. Students can merge their theoretical knowledge and practical skills through the team entrepreneurship project training, which also hastens the development of students' professional ethics and literacy.

3.3. Teaching Effectiveness of Cross-Border E-Commerce Theory and Practice Course

Based on the course assessment outcomes, with the same assessment scheme and difficulty, the final grades from the preceding two years (with and without the OBE teaching technique) are shown in **Table 2**. The table clearly shows that the teaching method based on the OBE concept has a significant positive impact on students' learning effectiveness, with an average grade increase of 6.1 points, a standard deviation decrease of 2.7, a significant increase in the proportion of students scoring above 90, and a significant decrease in the proportion of students scoring 69 and below.

We also carried out a questionnaire survey after the spring semester of 2022 to evaluate the efficiency of the course. In comparison to the beginning of the semester, the percentage of students who are highly interested in this course has increased from 80.74% to 91.51%, according to the survey results after 106 questionnaires were returned. Moreover, 95.29% of students think that the course may help them advance their practical abilities. More than 93% of students think that using a student-centered teaching approach based on the OBE concept will help them learn more effectively, independently, and collaboratively. Additionally, they are ready to use this paradigm moving forward.

This illustrates how the OBE-based teaching approach could increase students' interest in learning, practical skills, ability to learn effectively and independently, sense of teamwork, professionalism, and professional ethics, as well as the natural alignment of the professional training goal, curriculum goal, teaching results, and enterprise demand.

Table 2. Course performance before and after the implementation of the OBE teaching mode.

Semester	Teaching mode	Average grade	Standard deviation	Percentage of students in each grade range				
				Above 90	80 - 89	70 - 79	60 - 69	Under 60
2020-2021	Traditional	75.3	11.6	5.9%	38.8%	30.6%	20.0%	4.7%
2021-2022	OBE	81.4	8.9	31.3%	28.1%	32.3%	8.3%	0.0%

4. Conclusion

Cross-border E-commerce is a new field of foreign trade which is growing quickly. The rules of the platforms are frequently updated, and there is a constant need for new talent. Practitioners must also have multidisciplinary knowledge and expertise in foreign trade English, E-commerce, and international trade. The Theory and Practice of Cross-Border E-Commerce course's teaching design must also be modified to reflect market changes and business needs if applicable Cross-Border E-Commerce talent is to be developed that satisfies the needs of the current era in an output-oriented manner. The teaching program has been enhanced to better meet students' learning needs and preferences as well as business demands for talent. The course is divided into two sections: training in simulations and theoretical study. In order to direct students' autonomous learning, pique their interest in learning, and maximize their learning potential, we used teaching tactics like case studies, flipped classrooms, group projects, and scenario simulation. According to the teaching outcomes for 2020-2022, the teaching approach based on the OBE concept has considerably increased the teaching effectiveness, students' learning efficiency, and business ability, and is more suitable to creating high-quality applied cross-border e-commerce talents.

Supporting Projects

Key Projects of Educational Teaching Reform and Research of Beijing Institute of Petrochemical Technology: Research on the Teaching Reform of "Theory and Practice of Cross-border E-Commerce" Course Based on OBE Concept (ZDFS GG202104002).

Key Project of Education Reform of Beijing Institute of Petrochemical Technology: "Student-centered" Teaching Reform of "International Business Communication" Course Based on the Integration of OBE Concept and PAD Model (ZDXSZX202204003).

Conflicts of Interest

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

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