Research on teaching reform and innovation of e-commerce course for economic and management majors based on OBE concept

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Abstract. E-commerce, as a required course for major of economic management, has the characteristics of strong practicality and wide scope. Based on the OBE education concept, the use of ChaoXing XueXitong to carry out online and offline combination of teaching means; Integrate the latest achievements of ideological, political and disciplinary development into the teaching content; By adopting flexible teaching methods such as thematic discussion and scenario simulation, the classroom teaching of E-commerce course is combined with after-school tutoring (Q&A), after-class exercises, practical teaching and innovation and entrepreneurship education, so as to continuously improve the e-commerce practice and innovation ability of students majoring in economics and management.

Keywords: OBE education concept; Electronic Commerce course; Innovation ability

1 Introduction

Electronic commerce is a professional course of economic management combining theory and practice. This course involves a wide range of knowledge, mainly involving computer, business, network communication security, electronic payment, logistics, law, etc. It is difficult to teach. In recent years, both domestic and foreign universities have placed great emphasis on the implementation of outcome-based education (OBE), which promotes higher education reform [1]. The Outcome based education (OBE) educational concept, as the mainstream idea of the current higher education reform, is mainly student-oriented, and the corresponding construction of the curriculum system is carried out in a reverse design way[2]. Through the continuous integration of OBE education concepts into the courses of E-commerce for economics and management majors, the teaching objectives of E-commerce courses for different majors of economics and management can be more clearly defined, students' practical skills can be better mastered, and more professional e-commerce talents can be cultivated.

At present, there are many research literatures on the teaching reform of E-commerce related courses, but there are few researches from the perspective of OBE education concept. The main contents of the research are as follows:
(1) Research on teaching model
Zhang Linlin (2022)\(^\text{[3]}\) reformed the teaching mode of E-commerce mainly from two dimensions of teaching objectives and teaching content based on OBE teaching concept; Li Qin (2022)\(^\text{[4]}\) adopted a mixed online-offline teaching model to reform the teaching mode of "E-commerce", which was project-driven, results-oriented, student-led and teacher-guided, breaking the previous passive mode of teachers speaking and students listening; Sun Hang and You Ying (2022)\(^\text{[5]}\) take the working process as the orientation and use the intelligent teaching tool "Rain Classroom" as the platform to build an online and offline mixed teaching model based on the OBE teaching concept.

(2) Research on teaching design
Ge Fujiang (2022)\(^\text{[6]}\) redesigned the teaching methods and process evaluation of introduction to E-Commerce with the help of the functions of "question answering/discussion" and "testing" of the teaching tools of Blue Ink Cloud class, combined with the teaching concept of OBE. Through the corresponding practical application, the teaching effect is improved.

(3) Research on teaching objective, content, method and evaluation mechanism
In view of the problems existing in the course of Introduction to Electronic Commerce, such as the emphasis on theoretical knowledge teaching, the lack of teacher-student interaction in classroom teaching, and the failure of case content to keep pace with The Times, Du Hong (2020)\(^\text{[7]}\) proposed to formulate clear and reasonable teaching objectives Duhong proposed the teaching reform of Introduction to Electronic Commerce based on OBE theory, which should formulate clear and reasonable teaching objectives and design practical and novel teaching contents, adopt appropriate and effective teaching methods, establish objective and scientific evaluation mechanisms, Pan Feifei (2022)\(^\text{[8]}\) reformed the internal unit structure of Introduction to E-commerce, including teaching objectives, teaching content and teaching evaluation mechanism, through reverse design, and carried out corresponding teaching reflection based on specific reform results.

From the above literature research, it can be seen that the teaching reform of E-commerce under the concept of OBE is mainly analyzed from the aspects of teaching mode, teaching design, teaching objectives, etc., but the in-depth, comprehensive and innovative analysis is still lacking, especially the research on the effect of the teaching reform and innovation of E-commerce course is relatively insufficient. This paper will combine the teaching concept of OBE, carry out the teaching reform and innovation of E-commerce course from the aspects of teaching objectives, teaching content, teaching means, teaching methods and assessment methods, and list the achievements of the innovative measures. So as to continuously improve the teaching effect of "Electronic Commerce" course and students' practical innovation ability\(^\text{[9]}\).
2 Problems existing in the teaching of "Electronic Commerce" course for economic and management majors

2.1 Lack of clear distinctions in between teaching objectives of different majors

Economic and management majors mainly include marketing majors, logistics management majors, economics and finance majors, etc. Different majors of economy and management have different training objectives and different teaching requirements for the course of Electronic Commerce. Different teaching objectives should be formulated according to different majors. The teaching activities of "Electronic Commerce" course should be guided by teaching objectives and carry out around the realization of teaching objectives, therefore teaching objectives play a very important role in the actual teaching process of "Electronic Commerce" for economic and management majors. However, in the actual teaching process of "Electronic Commerce" for economic and management majors, the teaching objectives of each major cannot be clearly distinguished[10].

2.2 The teaching content is too scattered and fails to keep up with the development of the subject

As the course of E-commerce for economics and management majors involves various aspects of knowledge such as computer, logistics, payment and network marketing, and the course teaching content is scattered. Meanwhile, with the continuous application of Internet, Internet of Things, big data and cloud computing technology, e-commerce has been developing rapidly. At present, the teaching content of "E-commerce" course of economics and management is too scattered and fails to keep up with the development of e-commerce business discipline. As a result, the teaching content of "E-commerce" course is too lagging, which affects the quality of talent training[11].

2.3 The single information teaching method

Economics and management major "Electronic Commerce" course mainly uses multimedia information teaching means, this way makes use of the advantages of multimedia equipment, graphic, rich resources, and intuitive sense. However, if only multimedia teaching is used in the course of "Electronic Commerce", it will affect the interest of economic and management majors in learning "Electronic Commerce" course, and thus affect the teaching effect of economic and management majors "Electronic Commerce" course.

2.4 The traditional teaching method and weak teacher-student interaction

The teaching method of "Electronic Commerce" for economics and management majors still adopts the traditional teaching method, and the classroom teaching is mainly guided by teachers. Although some cases can be combined in the classroom, the teaching is mainly based on teachers' analysis, and students' analysis is less, and the interaction between teachers and students is not strong[12].

2.5 Too theoretical assessment content and too traditional assessment method

Through the assessment, the mastery and application of the knowledge of "Electronic Commerce" for students majoring in economics and management can be measured. At present,
the assessment content of "E-commerce" for economics and management majors is mainly the theoretical knowledge of e-commerce, ignoring the assessment of students' ability of application, problem analysis and problem solving\(^{[13]}\). At present, the examination method of "Electronic Commerce" for economic and management majors mainly adopts the traditional examination method of paper.

3 The teaching reform and innovation measures of E-commerce for economic and management majors based on the OBE concept

In response to the challenges in teaching objectives, content, and methods of the "E-commerce" course in management majors, corresponding reforms and innovations are proposed based on the Outcome-Based Education (OBE) teaching concept. Through thorough investigation and analysis of students, teachers, and teaching resources, it has been observed that the "E-commerce" course for management majors is typically offered in the second or third year when students have already acquired certain proficiencies in searching for online learning resources as well as analyzing and solving problems. Teachers possess strong capabilities in conducting blended teaching with extensive teaching experience. Teaching resources are adequately prepared with stable multimedia classrooms and an online learning platform to ensure seamless implementation of educational reforms\(^{[14]}\). The following measures are implemented for innovative reforms in the "E-commerce" course for management majors based on OBE principles:

3.1 Formulate different teaching objectives according to different majors

In the teaching of "Electronic Commerce" for economics and management majors, we adhere to the student-centered OBE teaching concept, analyze the learning situation of "Electronic Commerce" courses for different majors of economics and management, and formulate different teaching objectives according to different majors. The teaching reform of "Electronic Commerce" for economic and management majors will break the traditional curriculum model, integrate the latest achievements of electronic commerce into classroom teaching, and focus on cultivating students' self-study ability, practical ability and innovation ability.

3.2 Optimize the teaching content and integrate into the curriculum ideology and politics

3.2.1 Arrange modular teaching content

In order to closely link up the teaching content of "Electronic Commerce" course, the original knowledge point of "Electronic Commerce" course is set up different modules, and the teaching content is rearranged, so that students can master the knowledge of "Electronic Commerce" and form a complete knowledge chain. The course content of "E-commerce" is divided into eight modules after the arrangement, which are E-commerce overview, E-commerce model, Electronic payment and Internet banking, E-commerce logistics, E-commerce security technology, Mobile e-commerce and E-commerce law.
3.2.2 Pay close attention to the latest trends of the course and the latest research results of the subject

With the continuous development and change of information technology such as the Internet, big data and cloud computing, e-commerce is also constantly developing and changing. In the teaching process of "E-commerce" for economic and management majors, we should always pay attention to the frontier dynamics of e-commerce and constantly enrich the teaching content. At the same time, in order to avoid the relative lag of teaching materials, teachers should always grasp the new results of subject research, and timely supplement the latest important research results of the subject into the lecture content. By expanding the scope of knowledge and strengthening the cultivation of ability and quality, students in addition to learning to use the learned knowledge, can use "China Internet Network Information Center (CNNIC)" and "China Electronic Commerce Research Center (100EC.CN)" official website, "China Electronic Commerce Research Center" WeChat Official Accounts to consult more content and updated information, And self-study the relevant knowledge and technology.

3.2.3 Integrate the ideological and political content of the course into the teaching syllabus to strengthen the construction of ideological and political construction of the course

While teaching the basic knowledge of e-commerce and carrying out the practice of e-commerce, combined with the characteristics of "E-commerce" for economic and management majors with strong application and wide technical involvement, the ideological and political education content, such as patriotism education, integrity education, legal awareness education, etc., is actively integrated into the 2021 edition of the teaching syllabus for economic and management majors such as marketing, logistics management and E-commerce.

3.2.4 Transform scientific research achievements into teaching resources

The achievements of the project "Research on the Development of Rural Express Industry in Anhui Province based on C2C Model" were summarized, and the monograph "Research on the Development of Rural Express under the Background of E-commerce" was written, which expanded the teaching resources for the "E-commerce logistics" module of the course of "E-commerce" for economic and management majors.

3.3 Enrich information-based teaching methods

In addition to traditional multimedia teaching equipment, Super Star Learning mobile teaching tools can be used to improve the teaching effect in the course of "E-commerce" for economic and management majors. The methods of using the teaching means of ChaoXing XueXitong APP are as follows:

Before class, use ChaoXing XueXitong APP to upload the corresponding teaching materials: courseware, recommended journals, videos, reference books, so that students can preview the relevant knowledge points before class. At the same time, in order to know whether the students have pre-reviewed the relevant materials in advance, and let the students use the learning app to sign in online.

In class, the use of ChaoXing XueXitong APP learning to reasonably select control activities, create learning situations, implement classroom teaching, effectively crack the key and difficult problems in e-commerce, and better achieve the deep integration of learning and classroom
teaching. The main control activities carried out by the use of learning Pass are: quick answer, discussion, voting, questionnaire, group task and other activities.

After class, ChaoXing XueXitong APP is used to discuss relevant content after class, and answer questions raised by students after class.

3.4 Adopt flexible and diverse teaching methods

3.4.1 Thematic discussion method

Regular thematic discussions are held in the course of "E-commerce" for economic and management majors to deepen students' understanding of relevant knowledge of "E-commerce". For example, in teaching the knowledge content of "Electronic payment and network security" module, a thematic discussion of "What are the characteristics of wechat Payment and Alipay Payment" can be held. Through the thematic discussion, it can not only deepen the economic and management students' ability to master the relevant knowledge of e-commerce courses, but also improve the students' ability to collect and sort out e-commerce related materials, analyze and solve e-commerce problems. The contents of the thematic discussion are shown in Table 1.

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Topic Discussion content</th>
<th>Corresponding course module system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Combine your own reality, talk about the relationship between e-commerce and traditional commerce.</td>
<td>Module 1 Overview of electronic commerce</td>
</tr>
<tr>
<td>2</td>
<td>Combine your own reality and talk about your understanding of B2B.</td>
<td>Module 2: E-commerce model</td>
</tr>
<tr>
<td>3</td>
<td>Combined with their own reality, talk about the characteristics of wechat Pay and Alipay pay?</td>
<td>Module three: Electronic payment and network banking</td>
</tr>
<tr>
<td>4</td>
<td>Talk about the relationship between e-commerce and logistics.</td>
<td>Module 4 E-commerce logistics</td>
</tr>
<tr>
<td>5</td>
<td>Combined with their own reality, talk about e-commerce insecurity factors are what? What are the ways to ensure the security of e-commerce?</td>
<td>Module 5 electronic commerce security technology</td>
</tr>
<tr>
<td>6</td>
<td>According to the current promotion strategies of online shopping platforms on Double Eleven, what are the main ones?</td>
<td>Module 6 Network marketing</td>
</tr>
<tr>
<td>7</td>
<td>What are the applications of mobile e-commerce?</td>
<td>Module 7 Mobile e-commerce</td>
</tr>
<tr>
<td>8</td>
<td>In daily life, how can we use the E-commerce Law to safeguard our rights and interests?</td>
<td>Module 8 E-commerce Law</td>
</tr>
</tbody>
</table>

3.4.2 Combining theory with practice teaching method

Some theoretical knowledge of "E-commerce" course is relatively complicated, such as B2B e-commerce model, B2C e-commerce model, C2C e-commerce model, e-commerce logistics, network marketing, etc., these contents are not easy for students to understand. Through the practice operation of e-commerce on the computer, students can deepen their grasp of the
theoretical knowledge of E-commerce course. The content of computer practice teaching of "E-commerce" for economics and management majors is shown in Table 2:

### Table 2. The content of computer practice in the course of Electronic Commerce

<table>
<thead>
<tr>
<th>Serial number</th>
<th>Content of computer practice</th>
<th>Corresponding theoretical content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Registration of suppliers and purchasers in B2B module</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td></td>
<td>In the B2B module, suppliers publish goods and buyers apply to become suppliers' contracted merchant operations</td>
<td>2.1 B2B e-commerce model</td>
</tr>
<tr>
<td></td>
<td>Signing of electronic contracts in BtoB module</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The creation of online store in B2C module</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td></td>
<td>Shop online</td>
<td>2.2 B2C e-commerce model</td>
</tr>
<tr>
<td>3</td>
<td>C2C online auction goods</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td></td>
<td>C2C online auction goods</td>
<td>2.3 C2C e-commerce model</td>
</tr>
<tr>
<td>4</td>
<td>Logistics provider membership registration and warehouse, vehicle management</td>
<td>Module 4 E-commerce logistics</td>
</tr>
<tr>
<td>5</td>
<td>Suppliers establish business relationship with logistics providers and suppliers deliver goods to logistics providers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BtoB module order processing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of search engines</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>The release of online advertisements</td>
<td>Module 6 Network marketing</td>
</tr>
<tr>
<td>7</td>
<td>Operation of questionnaire</td>
<td></td>
</tr>
</tbody>
</table>

### 3.4.3 Case teaching method

The course of E-commerce for economics and management majors involves a lot of content based on the application of e-commerce. Through the use of case teaching method in the course of "E-commerce" for economic and management majors, the students' understanding of e-commerce application related content is deepened. The contents of the case analysis are shown in Table 3.

### Table 3. "E-Commerce" case analysis related content

<table>
<thead>
<tr>
<th>No.</th>
<th>Case content</th>
<th>Corresponding course module system</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Taobao Double 11</td>
<td>Module 1 E-commerce overview</td>
</tr>
<tr>
<td>2</td>
<td>Alibaba business model</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td>3</td>
<td>Jd.com business model</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td>4</td>
<td>The development process of ebay</td>
<td>Module 2 E-commerce model</td>
</tr>
<tr>
<td>5</td>
<td>Alipay and wechat development status</td>
<td>Module 3 Electronic payment and network banking</td>
</tr>
<tr>
<td>6</td>
<td>China's online banking development status</td>
<td>Module 3 electronic payment and network banking</td>
</tr>
<tr>
<td>7</td>
<td>&quot;One clothes good&quot; green logistics</td>
<td>Module 4 E-commerce logistics</td>
</tr>
<tr>
<td>8</td>
<td>Jd.com Logistics</td>
<td>Module 4 E-commerce Logistics</td>
</tr>
</tbody>
</table>
3.4.4 Scenario simulation method

In order to improve students' live marketing ability, the scenario simulation method is adopted to let students conduct live marketing activities in groups, which greatly improves students' live marketing practical ability.

3.4.5 Combine classroom teaching of E-commerce with innovation and entrepreneurship

Combine classroom teaching of E-commerce with education on innovation and entrepreneurship. In the process of teaching the knowledge points of "E-commerce" course, it constantly integrates innovation and entrepreneurship education, comprehensively promotes the deep integration of innovation and entrepreneurship education with professional education, explores the reform of teaching methods such as group discussion method and case analysis method to train students' innovation ability, and cultivates students' innovative and entrepreneurial qualities. According to the teaching content of "E-commerce" course, the classroom teaching of "E-commerce" is combined with e-commerce "Innovation and creative entrepreneurship" challenge competition, innovation and entrepreneurship project, graduation thesis, etc., so as to continuously improve students' e-commerce practice and innovation ability.

3.4.6 Carry out diversified classroom teaching

By combining the classroom teaching of "E-commerce" for economics and management majors with the e-commerce "Innovation, creativity and entrepreneurship" challenge competition, innovation and entrepreneurship project, graduation thesis, etc., diversified classroom teaching can continuously improve students' e-commerce practice and innovation ability.

3.5 Increase the process assessment, and make full use of mobile teaching APP learning to improve the assessment method

3.5.1 Increase the process assessment

There are two parts in the assessment results of the Electronic Commerce course for economic and management majors, that is, the usual results and the final results. Due to the strong practical operation of "Electronic Commerce" course, it emphasizes students' ability to analyze and solve problems. The proportion of normal process assessment results will be increased to 50%. The normal process assessment can be adopted: Sign in (10%), daily work (30%), report exhibition (30%), among which the usual work of e-commerce, international economics and trade, economics and finance major examination courses can be in the form of objective question bank, marketing, logistics management major examination courses can be in the form of thematic discussion, scenario simulation[15].
3.5.2 The activities carried out on the mobile teaching APP learning channel can be included in the daily process assessment

The activities carried out on the learning Channel are included in the normal process assessment, and the results of the activities carried out on the learning channel account for 30% of the results of the normal process assessment.

3.5.3 Use the mobile teaching APP to carry out mid-term and end-of-term teaching assessment

In order to improve the teaching effect of the course "E-commerce" for economic and management majors, the final assessment method set as examination course for economic and management majors "E-commerce" is reformed, and the traditional paper assessment is now changed to the use of mobile teaching APP learning app for final teaching assessment.

4 The teaching reform and innovation Achievements of "E-commerce" course for economic and management majors

In the teaching reform of E-commerce course for economic and management majors, the traditional teaching concept centered around "teaching" is transcended, and the OBE teaching concept centered around "learning" is implemented. The promotion of classroom reform through "Internet + educational experience" is actively pursued. By leveraging the construction of provincial smart classrooms and provincial E-commerce teaching demonstration classes, students' innovative and practical abilities are cultivated. The specific results are as follows.

4.1 Improved the classroom teaching effect

Questionnaire Star was used to conduct a "Questionnaire survey on the online and offline hybrid teaching Reform of E-commerce under the OBE concept" for undergraduate marketing class of 2020, undergraduate logistics management class of 2020 and undergraduate marketing class of 2021 ". The results are as follows:

*Active classroom atmosphere.* Through the investigation of the classroom atmosphere of "E-commerce" course, it is found that 71% of the students think that the classroom atmosphere is active, and they can actively cooperate with the teacher and participate in classroom activities; 28% of the students think that the classroom atmosphere is normal, but they can cooperate with the teacher and participate in classroom activities; only 1% of the students do not want to cooperate with the teacher (as shown in Figure 1).
Students actively participate in thematic discussions. Through the investigation of the participation in the topic discussion of E-commerce course, it is found that 26% of the students are very positive in the topic discussion, 63% of the students are positive in the topic discussion, 11% of the students are neutral in the topic discussion, and 0 of the students are not active in the topic discussion (as shown in Figure 2).

The students have a high evaluation of teaching satisfaction. Through the investigation of the teaching satisfaction of the course "E-commerce", it is found that 51% of the students are very satisfied with the teaching satisfaction, 41% are satisfied with the teaching satisfaction, 8% are moderately satisfied with the teaching satisfaction, and no students are dissatisfied with the teaching satisfaction (as shown in Figure 3).
4.2 Enhanced students' innovation ability

Students actively apply for national and provincial innovation projects. Marketing and logistics management students rely on the "E-commerce" course to carry out blended teaching and related teaching content. They have declared 3 national innovation projects and 3 provincial innovation projects (all concluded), and published papers such as "Problems and Countermeasures in the location of rural express outlets in Anhui Province", "Research on the Development of Rural argyle Logistics in Xuancheng under O2O Mode" and "Research on the Application of Baumo-Walf Model in the location of rural Express Outlets in Anhui Province", which greatly improved students' innovation ability.

Students actively participate in the e-commerce tri-creation competition. The students majoring in logistics management combined the teaching content of "E-commerce" with the e-commerce Tri-creation Competition, and the projects planned by "South City Memory Food" and "Clothes change the past" won the first prize, the second prize and the Best creative award in the 12th E-commerce Tri-Creation Competition.

4.3 Improved the teachers' teaching innovation ability

By sorting out the relevant contents of the teaching reform of "E-commerce" course under the concept of OBE, I participated in the first National College Teachers' Teaching Innovation Competition and won the third prize, which improved the academic level and professional level of teachers, and enhanced their teaching innovation ability. At the same time, according to the experience and lessons in the teaching process of "E-commerce" and combined with the teaching background of the novel coronavirus epidemic, the teaching case of "Cloud + terminal" teaching integrating "Learning Pass + Tencent Conference" makes the online teaching of "E-commerce" no discount " is compiled, which provides corresponding reference for other teachers in our school.

4.4 Actively carry out relevant lectures to play a demonstration role

By giving academic lectures on "Discussion on the Development of Rural Express delivery under the background of E-commerce" to logistics management and e-commerce majors. It
expanded the professional knowledge of students majoring in logistics management and e-commerce, and made students majoring in logistics management and e-commerce have a deeper understanding of their professional knowledge.

According to the teaching reform and innovation results of "E-commerce" course under the concept of OBE, the lectures of "Discussion on Mobile Teaching Mode Based on ChaoXing XueXitong" (offline) and "Discussion on Online Course Teaching Design Based on Learning" (live online) were held for teachers in Anhui Sanlian College. In terms of how to develop mobile teaching and online teaching, it has played a good demonstration role in Anhui Sanlian University.

5. Conclusion

As an advanced educational concept, OBE plays an important role in teaching design, teaching content, teaching methods, teaching evaluation and so on. Through implementing the "student-centered" OBE education concept in the "e-commerce" course of economic and management majors, paying attention to the guiding role of teachers in the teaching process, making full use of ChaoXing XueXitong APP, guiding students of economic and management majors to master the teaching content of "e-commerce" course gradually from shallow to deep, arousing students' enthusiasm for learning "e-commerce" course, enhancing students' consciousness and initiative, improving students' e-commerce innovation ability, and meeting the needs of related enterprises for e-commerce innovative talents.

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