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Exploration of the Content Design and Assessment System of Statistics Course for Vocational Finance and Economics Majors Based on OBE

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Abstract: In the statistical teaching practice of various majors in economics and management in Chinese universities, there are generally drawbacks such as dull teaching content and weak applicability. How to organically integrate the teaching of statistical theory with practical teaching, and truly cultivate applied talents that meet the needs of regional economic and social development, is a prominent problem faced by the teaching of statistics courses in universities. This article aims to explore the content design and assessment system optimization of statistics courses in higher vocational finance and economics majors based on results oriented education. Through in-depth analysis of the connotation of OBE concept and its guiding significance for vocational education, combined with the characteristics of statistics in finance and economics majors, a series of course content design principles and assessment system reform suggestions are proposed to improve teaching quality, cultivate students' statistical application ability and innovative thinking.

Keywords: OBE, Statistics, Course content design, Assessment system.

1. Introduction

With the rapid development of society,the demand for statistics in the field of finance and economics is increasing.The statistics course of higher vocational finance and economics major is an important way to train students to master the basic theories and methods of statistics and have the ability to analyze financial data.However,the traditional course content design and assessment system have been difficult to adapt to the training requirements of financial talents in the new era.Therefore,based on the concept of OBE,this paper explores the content design and assessment system of statistics course of higher vocational finance and economics major,aiming to improve the teaching effect of the course and cultivate more financial and statistical talents in line with the social needs.

2. Analysis of the Current Situation of Statistics Teaching in Higher Vocational Finance and Economics Majors

Statistics, as an important course for cultivating students' data analysis abilities, is of great significance in enhancing their comprehensive quality and employment competitiveness in higher vocational finance and economics majors. However, in the actual teaching process, there are some problems and shortcomings in the statistics teaching of vocational finance and economics majors, mainly manifested in the course content, teaching methods, and assessment methods.

2.1. In terms of course content

At present, the content of statistics courses in higher vocational finance and economics majors often focuses too much on imparting theoretical knowledge and neglects the combination with practical applications. Statistics, as a highly applied discipline, its theoretical knowledge and methods should be closely combined with practical cases to enhance students' practical and problem-solving abilities. However, in practical teaching, teachers often focus on explaining statistical principles, formulas, and methods, lacking connection with practical financial issues, which leads to difficulties in understanding and applying the knowledge learned by students during the learning process. In addition, the course content updates slowly and is disconnected from the actual needs of the rapidly developing financial industry, making it difficult for students to apply their statistical knowledge to practical work after graduation.

2.2. In terms of teaching methods

The teaching methods of statistics in higher vocational finance and economics majors are relatively single, mainly relying on teacher lectures and students passively receiving knowledge. This traditional teaching method is difficult to stimulate students' learning interest and enthusiasm, resulting in poor classroom effectiveness. Meanwhile, due to the lack of interaction and practical activities, students are unable to gain a deeper understanding and mastery of statistical knowledge. Although some teachers attempt to introduce teaching methods such as case studies and group discussions, due to the lack of systematic design and implementation, they often become superficial and difficult to achieve the expected teaching results.

2.3. In terms of assessment methods

The assessment method for statistics courses in vocational finance and economics majors is usually based on the final closed book exam, which is difficult to comprehensively evaluate students' learning outcomes and abilities. Closed book exams focus on testing students' memory abilities, while neglecting the evaluation of their comprehension, application, and innovation abilities. In addition, there is a lack of process and practical assessments, which cannot truly reflect the learning process and practical application ability of students. This assessment oriented learning approach can easily lead

students into the quagmire of exam oriented education, neglecting their in-depth understanding and practical application of statistical knowledge.

3. OBE Education Concept and Its Application in Statistics Curriculum

OBE (Outcome Based Education), also known as Outcome Based Education, is an educational philosophy that is guided by the learning outcomes of students. It emphasizes that the educational process should be designed and implemented around the learning outcomes that students should ultimately achieve, ensuring that they truly master the necessary knowledge and skills. The basic connotation of OBE education philosophy includes four main links: clarifying educational goals, designing teaching content, implementing teaching strategies, and evaluating learning outcomes. They are interrelated and mutually reinforcing, together forming a complete education system.

The characteristics of OBE education philosophy are mainly reflected in the following aspects: firstly, it is student-centered, emphasizing the subject status and role of students, and emphasizing their active learning and self-development; Secondly, it is result oriented, clarifying the learning outcomes that students should achieve, and based on this, designing and implementing teaching activities; Finally, it emphasizes continuous improvement, optimizing the teaching process through continuous teaching reflection and evaluation, and improving the quality of education.

Statistics, as a widely applied and highly practical discipline, has a high degree of compatibility with the OBE education philosophy. Applying the OBE education philosophy to statistics courses can help better achieve course objectives, improve student learning outcomes and practical abilities. Firstly, the OBE educational philosophy emphasizes student-centered approach, which can stimulate students' interest and enthusiasm in statistics. By introducing practical cases and setting problem scenarios, students are guided to actively explore statistical knowledge and solve practical problems, thereby enhancing their learning motivation. Secondly, the outcome oriented nature of OBE education philosophy helps to clarify the teaching objectives of statistics courses. Educators can develop specific and feasible teaching objectives based on the demand for statistical talents in society and the actual situation of students, ensuring that students master necessary statistical knowledge and skills. Furthermore, the continuous improvement and flexibility of OBE education philosophy can promote the continuous optimization and improvement of statistics courses. Educators can adjust teaching content and methods in a timely manner based on student learning feedback and evaluation results to improve teaching effectiveness. At the same time, educators can also pay attention to the latest trends and development trends in the field of statistics, timely integrate new knowledge and technology into the curriculum, and maintain the progressiveness and practicality of the curriculum.

4. Design of Statistics Course Content Based on OBE Concept

4.1. Clarify course objectives

The statistics course based on the OBE concept should first clarify the course objectives. These goals should be set around the final learning outcomes of students, ensuring that they have the ability to apply statistical knowledge to solve practical problems after completing the course. Specifically, the course objectives should include the following aspects: mastering the basic concepts, principles, and methods of statistics; Ability to use statistical software for data analysis; Ability to interpret and present statistical results; And cultivate statistical thinking and innovation awareness. These goals should not only reflect the transmission of knowledge, but also focus on the cultivation of abilities and the improvement of quality.

4.2. Restructuring the curriculum content system

On the basis of clarifying the course objectives, it is necessary to reconstruct the traditional statistical course content system. In the process of restructuring, attention should be paid to the integration and optimization of course content, as well as the close integration with practical applications. Specifically, the course content can be divided into three major modules: basic theory, method application, and practical skills. The basic theory module focuses on introducing the basic concepts, principles, and methods of statistics, laying a solid foundation for subsequent applications and practices. The method application module introduces practical cases and data to enable students to apply their knowledge for data analysis and cultivate the ability to solve practical problems. The practical skills module focuses on cultivating students' practical skills, including the use of statistical software, data collection and processing, and writing statistical reports.

4.3. Choose appropriate teaching methods

The selection of teaching methods is crucial for statistics courses based on the OBE concept. We should abandon traditional cramming teaching and adopt a combination of multiple teaching methods for teaching. For example, methods such as case teaching, problem teaching, and inquiry teaching can be used to stimulate students' interest and initiative in learning. Case teaching can introduce real statistical cases, allowing students to master statistical knowledge in the process of analyzing cases; Problem based teaching is problem oriented, guiding students to actively think and explore; Exploratory teaching encourages students to solve problems through self-directed learning and collaborative exploration. In addition, modern information technology tools such as online courses and virtual experiments can be utilized to enrich teaching methods and forms, and improve teaching effectiveness.

4.4. Emphasize the practicality and innovation of course content

In the process of designing course content, practicality and innovation should always be emphasized. Practicality requires the course content to be closely linked to practical problems and needs, enabling students to apply what they have learned; Innovation encourages course content to keep up with the times, introducing new theories, methods, and technologies, and cultivating students' innovative awareness and abilities. To this end, industry experts can be invited to participate in course content design, introducing the latest statistical methods and technologies; At the same time, innovative practice projects can also be set up to encourage students to apply their learned knowledge to solve practical

problems, cultivate innovative awareness and practical abilities.

5. Construction of an OBE Based Statistical Course Assessment System

OBE emphasizes that education should design and implement teaching activities around the learning outcomes that students should ultimately achieve, ensuring that students truly master the necessary knowledge and skills. For statistics, a highly applied and practical discipline, it is crucial to establish a curriculum assessment system based on the OBE concept. We will elaborate in detail on how to construct a statistics course assessment system based on the OBE concept from the aspects of setting diversified assessment methods, emphasizing process evaluation, and introducing practical assessment.

5.1. Diversified assessment methods

The statistics course assessment system based on the OBE concept should abandon the traditional single assessment method mainly based on final closed book exams and adopt diversified assessment methods to comprehensively evaluate students' learning situation. Specifically, it can include the following assessment methods:

(1) Homework and quizzes: By assigning homework and quizzes closely related to the course content, students are tested for their mastery of basic knowledge. Homework and tests can include multiple choice questions, fill in the blank questions, calculation questions, and other forms, aiming to help students consolidate their knowledge and improve their ability for self-directed learning.

(2) Classroom interaction and discussion: By organizing classroom interaction and discussion, guide students to actively participate in the teaching process, and test their thinking and expression abilities. Teachers can raise questions about hot topics or practical cases in statistics, guide students to conduct in-depth discussions, and stimulate their interest and initiative in learning.

(3) Group projects and reports: Collaborate in groups to complete projects related to course content, and write project reports to test students' teamwork and practical abilities. Group projects can revolve around practical problems, allowing students to apply their learned knowledge to solve problems and improve their overall quality in practice.

5.2. Process evaluation

The statistics course assessment system based on the OBE concept should focus on process evaluation and pay attention to the performance and efforts of students in the learning process. Process evaluation can be achieved through the following two methods. On the one hand, attendance and classroom performance: incorporating student attendance and classroom performance into the assessment system to encourage students to participate in classroom learning on time and actively participate in teaching activities. Teachers can evaluate students' classroom performance by observing their level of attentiveness and answering questions. On the other hand, learning notes and reflection. Require students to regularly submit study notes and reflection reports to understand their thoughts and gains during the learning process. Learning notes can help students organize their knowledge and deepen their understanding; Reflection reports can guide students to reflect and summarize their learning process, and improve their ability for self-directed learning.

5.3. Introduction of practical assessment

The statistics course assessment system based on the OBE concept should introduce practical assessment to test students' ability to apply the knowledge they have learned to solve practical problems. Practical assessment can be achieved through the following two methods. On the one hand, experimental operations and data analysis. By arranging statistical experimental courses, students can personally conduct data analysis and processing to test their practical operational abilities. Experimental operations can revolve around practical problems, allowing students to master statistical methods and skills in practice; Data analysis can help students improve their data processing and interpretation abilities. On the other hand, social investigation and practice reports: By organizing students to participate in social investigation activities and writing practice reports, students are tested for their ability to apply the knowledge they have learned to solve practical problems. Social surveys can help students gain a deeper understanding of practical problems, improve their awareness of problems, and enhance their practical abilities; Practice reports can help students organize survey data and analyze results, and improve their writing skills.

6. Implementation Effect Expectation and Analysis

After the design and implementation of the statistical course content and assessment system based on the OBE concept, it is expected to have positive effects in multiple aspects.

Firstly, from the perspective of student learning outcomes, this reform will encourage students to have a more comprehensive grasp of statistical knowledge, improve their application and problem-solving abilities. Through diversified assessment methods, students no longer rely solely on last-minute review at the end of the semester, but need to continuously engage in learning throughout the entire semester, thereby gaining a deeper understanding and mastery of knowledge. At the same time, emphasizing process evaluation will motivate students to actively participate in their daily learning, enhance their self-learning and teamwork abilities.

Secondly, the quality of teaching will also be significantly improved. Teachers can have a more accurate understanding of students' learning progress and difficulties, adjust teaching strategies in a timely manner, and make teaching more in line with their actual needs. In addition, by introducing practical assessment, teachers can combine theoretical knowledge with practical applications, allowing students to learn and grow in practice, thereby improving teaching effectiveness.

Thirdly, statistics courses based on the OBE concept will be more in line with the needs of society. Graduates will have stronger practical abilities and innovative awareness, and can better adapt to and meet the demand for statistical talents in society. This will enhance the employment competitiveness of graduates and also increase the recognition and evaluation of the statistics major in society.

7. Conclusion and Outlook

This article explores the content design and assessment system of statistics courses in higher vocational finance and economics majors based on the OBE concept. Through measures such as clarifying course objectives, optimizing course content, strengthening practical teaching, and reforming the assessment system, the aim is to improve the teaching quality and practical ability of statistics courses in higher vocational finance and economics majors. In the future, further in-depth research can be conducted on the application of OBE concepts in other professional courses, as well as how to further improve the teaching effectiveness and application value of statistics courses in finance and economics through school enterprise cooperation and other means.

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