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Research on the Design and Practice of Online Experimental Open Course Based on OBE Concept

-- Python Experiment as An Example

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Abstract

Information technology belongs to the basic education courses in higher education and is in an important place. However, university information technology classroom still follows the teaching of traditional classroom, without significant effect. Firstly, the effectiveness goal is not clear, students don't know "why learn" and lack the knowledge of core information literacy; secondly, there is no new teaching platform, teachers still adopt "irrigation education" and students become passive recipients of learning. In order to solve the current problems of information technology teaching and achieve student-centered information technology teaching, this study introduces the concept of OBE education, combines the characteristics of university information technology disciplines and OBE characteristics, builds a university information technology OBE teaching model, and carries out university information technology curriculum design based on this teaching model. OBE, or output-based education, emphasizes on defining learning objectives in the expected way, designing backwards from students' needs, implementing positively, realizing student-centeredness in the real sense, and improving teaching quality effectively. This study tries to contribute some new ideas to the design and practice research of information technology education in universities.

Keywords

OBE; Information technology; Online open courses; SuperStar platform.

1. Research Background

1.1. Impact of Informationization in Education

Today, we have entered the information society, and the rapid development of computer technology and network technology has not only influenced the society into an information society, but also accelerated the process of informationization in education. Education is no longer confined to the traditional classroom, but has broken through the boundaries of time and space, and all aspects have been integrated into information technology, teaching media and teaching methods have gradually become intelligent, teaching resources have become rich, and major online platforms have emerged, enabling students to personalize their learning anytime and anywhere, creating a good information-based learning environment. In July 2010, China's Ministry of Education took nearly two years to promulgate the "National Medium and Long-term Education Reform and Development Plan (2010-2020)", which set the strategic goals for future education reform and development: to basically realize education modernization, basically form a learning society, and enter the ranks of a strong human resource country. This goal has played an invaluable role in accelerating the development of

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education informatization in China. And the third article of Chapter 19 "Accelerating the process of education informatization" emphasizes accelerating the development and utilization of high-quality educational resources, of which the development of online learning courses is particularly important, emphasizing the establishment of an open and shared public service platform for educational resources, so the construction of online open courses adapts to the needs of the information age and is very valuable.

1.2. The New Requirements of Contemporary Society for Information Technology Education

With the continuous promotion of information technology, information technology applications are becoming more and more widespread, and contemporary society attaches particular importance to information technology education, requiring that the information technology classroom should be student-oriented, with the teacher acting as a guide. The curriculum objectives are no longer limited to the mastery of simple skills, but have more new requirements, especially focus on the cultivation of information literacy, in May 2012, the "Basic Education Information Technology Curriculum Standards" proposed that "the overall goal of the basic education information technology curriculum is to cultivate and improve students' information literacy, pay attention to the cognitive ability, judgment ability, imagination, critical ability related to information literacy The overall goal of the basic education IT curriculum is to cultivate and enhance students' information literacy, focus on the cultivation of cognitive ability, judgment, imagination, and critical ability related to information literacy, and form values and sense of responsibility that are compatible with the information society. Therefore, the information technology curriculum should be constructed with the new information technology curriculum objectives as the standard, emphasizing the cultivation of information literacy.

1.3. Inspiration of OBE Concept to Education and Teaching

Our education has been focusing on the study of how to learn and the exploration of teaching methods. The emergence of OBE concept provides a new way of thinking for current education and teaching, which mainly includes the following three points: First, it focuses on the expected learning goals rather than the learning process. It emphasizes the reverse development of teaching design, learning objectives, learning activities and learning evaluation consistency and other concepts, from analysis, design, development, implementation, evaluation and other aspects to the achievement of the expected goals; secondly, it focuses on the active learning of students, rather than the passive teaching of teachers. Emphasis on students as the main body, focus on what students need, whether students master, etc., is no longer what the teacher speaks, how the teacher teaches. Third, the OBE concept focuses more on the future, emphasizing the future effectiveness of students as the starting point and the core literacy that students should have as the standard, cultivating the talents needed by society and constantly adjusting to the requirements of the rapidly changing times. In conclusion, the new teaching model oriented to learning effectiveness, learner-centered, competency-based, and based on learning outcomes has an extremely important guiding role for university IT online open courses.

2. Current Status of Domestic and International Research

2.1. Current Status of Research on OBE Concept

The concept of OBE was firstly originated from abroad. In 1981, SpadyW.D., an American scholar, was the first to propose the concept of OBE in his article, and later he made a systematic elaboration of the concept of OBE, defining OBE as "a clear and explicit focus and structure of the educational system, to ensure that students master the experience of substantive success

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and navigate future life ". In 2002, Harden R.M. summarized twelve advantages of OBE over traditional education and described the detailed development of OBE from 1981 to 2002. In 2002, HardenR.M. summarized twelve advantages of OBE over traditional education and presented the detailed development of OBE from 1981 to 2002. In general, foreign research results on OBE education philosophy provide a rich theoretical basis for learning for China's research. The domestic research on OBE concept is late, but domestic scholars pay much attention to the research on OBE and have made some useful explorations. According to the advanced search of "OBE" or "results-oriented" on China Knowledge Network, 4820 articles have been retrieved until February 2020, and according to the measurement visualization analysis of China Knowledge Network, OBE was less researched when it was first proposed, and only in 2008, the number of publications reached a small amount. The number of articles published after 2014 has gradually increased, and in recent years, it has increased significantly, which shows that the research on the concept of OBE education is becoming more and more popular nowadays.

The domestic research on OBE is mainly divided into two major directions, one is teaching model reform, and China has gradually introduced foreign theories about OBE into the domestic teaching reform, and after continuous practice, a more localized and applicable teaching model has been formed. Dong Yonggang and Song Jianfeng pointed out that the core of OBE education model is centered on the main line of "defining expected learning output-achieving expected learning output-assessing learning output", and Deng Miaolei also mentioned that "under the guidance of OBE concept, adaptive teaching and learning is carried out. Under the guidance of OBE concept, adaptive reform is carried out to reflect the goal and result-oriented role of the curriculum. Secondly, OBE application research is mainly applied to the education industry in China, mainly in operational subjects such as social science, engineering technology and information technology. In addition, it is found through the literature that our OBE concept is mostly applied in vocational or higher education, and less in basic education, and the actual OBE concept first appeared in the basic education reform in the United States and Australia, which was proposed by William Spady et al. in 1981.

Therefore, this paper is of great research significance to explore the practice of university information technology, a basic education course with strong operation class, in conjunction with the OBE concept.

2.2. Research Status of Online Open Courses

In 2007, Professor David Wiley opened the first open course called "Introtoopen Education" on the Internet. Based on the characteristics and teaching practices of this online course, Dave Cormier and Bryan Alexander gave it the name MOOC. Subsequently, the research on online open courses gradually increased in various countries, and it was found through the study that MOOC entered an explosive development stage in 2012. Among them, the United States is the birthplace of MOOC, and various online learning platforms established by major universities came out one after another, such as the three mountains of MOOC "Coursera", "Udacity", "edX" in 2012. "edX", online open courses have generally emerged in major developed countries in the world. There are also more studies on online open courses in China, and an advanced search was conducted on China Knowledge Network using "online open course" or "MOOC" as the topic. Visual analysis shows that there were only a few studies on online open courses from 2008 to 2011, but from 2012 onward, the number gradually increased and grew rapidly, reaching a peak of 2882 articles in 2017 and a little less in 2018. A major hot spot. Domestic research topics on online open courses are mainly divided into three major areas, namely online courses, teaching mode, and teaching reform.

As for online courses, it is mainly about course construction and platform. Curriculum construction includes goals, resources, content construction, etc. For example, Lai Liangxin

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mentioned that "our university introduces the construction goals, construction ideas and construction contents of the online open course of 3D animation." As for the platform, Bai Shigang and Feng Fang mentioned that "China's Wisdom Tree, Super Star Erya platform, China University MOOC, etc., provide MOOC courses in more than 400 universities, the number of courses more than 2400." It can be seen that major online open platforms are developing rapidly and commonly used. In terms of teaching modes, including flipped classroom and hybrid teaching, Sun Kang took the course "Outline of Modern Chinese History" of Wuhan University as an example [17] to explore the practice of flipped classroom teaching reform. In terms of teaching reform, Qu Dawei and Zhang Peng mentioned that "massive open online courses (MOOC) and small-scale restricted online courses (SPOC) are promoting changes in teaching contents, methods, modes and institutional mechanisms of teaching management. It can be seen that online open courses have a huge impact on traditional teaching in China, and major online open platforms are gradually maturing, and online open courses have become a major trend.

3. Purpose and Significance of the Study

3.1. Purpose of the Study

(1) To review relevant literature to understand the research on the teaching practice of OBE education concept in the field of education, and to explore the feasibility and rationality of OBE education concept in the design and practice of online open course of "Python Experiment" in university.

(2) Investigate the current teaching situation of "Python Experiments" in universities, discover the problems and difficulties in the classroom, and further explore the OBE teaching mode under the guidance of OBE concept. Then, based on the Super Star platform, we will build an online open course for information technology, integrate learning resources, design an online open course system that meets both the needs of the course and the personalities of students, solve the difficulties and problems of the current course, and try to contribute to the teaching of information technology in universities.

(3) Put the OBE education model in the online open course of "Python Experiment" of the university into teaching practice, analyze the benefits and shortcomings of the online open course under the guidance of this model, and provide practical reference for the construction of the course of "Python Experiment". 1.3.2 Research significance (1) Theoretical significance ① Through the design and development of some contents in the course of "Python Experiment" of the university, the Design online open course system based on OBE education concept, explore new ideas and methods of course construction, and do something to improve the existing deficiencies in the current university IT course. (2) The combination of the learning objectives of university IT and OBE education concept, the focus on results orientation, and the "backward and forward" design approach make the developed course more reasonable and achieve the course objectives. (2) Practical significance ① Under the guidance of scientific and reasonable practice theory, the OBE teaching mode is applied to the actual teaching practice of the online course "Python Experiment", and teaching strategies such as "flipped classroom" and "task-driven" are adopted to improve The OBE teaching model is applied to the actual teaching practice of the online course "Python Experimentation". The successful experience of the online course of "Python Experiment" can provide reference for other schools and promote the development of university IT classroom teaching.

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4. Research Content, Methodology and Innovation Points

4.1. Research Content

Firstly, based on the subject characteristics of "Python Experiment", we investigate the current teaching status, review the literature according to the problems found, introduce the OBE concept, combine the structural elements and characteristics of OBE, and build the OBE teaching model. Then, based on SuperStar's "PanAsian" platform, we designed the online open course of "Python Experiment" from top to bottom, including the design of learning objectives, content, resources, strategies and evaluation. Finally, we selected one theoretical class and one practical class of the university "Python Experiment" course for practical application, set up experimental classes and control classes, tested the application effect of OBE-based teaching mode in university IT online courses, summarized the effectiveness of the practice, and provided new ideas for the improvement of university IT education design and practice.

4.2. Research Methods

(1) Literature research method

Relying on the library resources of our university, China Knowledge Network and Google Scholar, the author uses "OBE concept", "result-oriented", "online open course", "MOOC", "online open course", "online open course", "online open course", "online open course", "online open course", "online open course", "online open course", "online open course" and "online open course". The research on "OBE" and "online open course" is summarized in an objective and comprehensive analysis by searching topics such as "MOOC" and "university information technology". The research status of "OBE" and "online open course" is summarized to further ensure the advancedness and rationality of this study.

(2) Questionnaire survey method In the early stage of this study, questionnaires were distributed, counted, and analyzed to understand the current situation of university IT teaching, problems, and students' expectations and suggestions for online open courses; after the practice, questionnaires were distributed again to investigate the experimental learners' feedback about this experiment.

(3) Interview method

The interview method was used to communicate with the university IT teachers and representative students who participated in this study about the difficulties and needs of the IT course, teaching effectiveness, etc. It is necessary to set up interview questions in advance, record the interview process, and analyze the interview results, so as to find the shortcomings and improvement measures of the study.

(4) Experimental research method

In this study, in the process of practical application, a section of theory-based course and a section of practice-based course in "Python Experiment" were selected to implement teaching, and experimental and control groups were set up, with the experimental group implementing online course teaching under 0BE teaching mode and the control group teaching in the traditional way, and finally comparing and analyzing the effects to draw conclusions.

5. Related Concepts

5.1. OBE Concept

Outcome-based education (OBE) was first developed in North America in the 1990s. OBE has been defined by many prominent scholars. The American scholar Spady W.D. defines OBE as "the clear focus and organization of an educational system around ensuring that students have experiences that lead to substantial success in their future lives." The Western Australian education sector defines OBE as "an educational process based on the achievement of specific

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student learning outputs." The author believes that although scholars have different expressions of OBE, the essence is the same; OBE focuses on learning outcomes, firstly, to clarify the goals of the future outcomes to be achieved by students, and then to reverse the design and implement it positively to ensure that each learner can achieve the outcomes. It can be seen that OBE promotes the reform and innovation of education model, and truly makes students become the master of learning.

5.2. Online Open Courses

Online open course is actually a direct translation of "MOOC", i.e. "Massive Open Online Course", which is defined by Wikipedia on September 16, 2012 as "a course in which participation is distributed On September 20, 2012, the definition evolved to "MOOC is a new development in the field of distance education as well as in the concept of open education promoted by open educational resources." Each quality course is a "technology platform + content resources", so the online open course is a course that relies on the network platform to achieve the sharing of educational resources and can be learned anywhere, anytime. Nowadays, with the rapid development of information technology, various MOOC platforms have emerged accordingly, such as "Love Course", "Super Star Pan-Asia", "Wisdom Tree" and "Xue Tang Online". Based on these platforms, the construction of online open courses can have a great impact on the transformation of education today, and it is worthwhile for us to study them seriously.

6. Theoretical Foundations

6.1. Theory of Educational Objectives

There are many theories about educational goals, among which Taylor's principle is closely related to the OBE concept, which mainly emphasizes four questions, namely, what educational goals schools should strive to achieve, what educational experiences should be provided to students to achieve these educational goals, how to effectively use these educational experiences, and how to make sure that these goals are being achieved. Curricula are designed based on the core concept of "educational goals", and OBE's outcome-based orientation is based on this theory. The design of curriculum goals is based on Bloom's theory of classifying educational goals into three domains: cognitive, motor skills, and affective, which provides the basic basis for test design and curriculum development worldwide.

6.2. Bloom's Mastery Learning Theory

In the early 1970s, Bloom, a famous American educator and psychologist, proposed the mastery learning theory, which emphasizes that teachers provide the best instruction and students have enough time to learn, and most students can get high quality instruction. He believed that every student should be treated fairly and every student should be able to master the learning content, which provides the theoretical basis for the OBE education model. The OBE teaching model is to clarify the learning objectives, then achieve the learning objectives through various teaching methods, and finally evaluate the learning output to ensure that most students achieve the learning outcomes that should be achieved.

6.3. Constructivist Learning Theory

Constructivist learning theory was proposed by Piaget, an expert in cognitive psychology, and was originally derived from theories about children's cognitive development. It is mainly about abandoning the traditional irrigation-based teaching and realizing a new student-oriented teaching mode. In the design and practice of university IT online open course, it takes students' needs as the starting point and students' independent inquiry and cooperative inquiry as the main teaching means, with the teacher playing a supporting role, helping students to clarify learning objectives before class, providing them with teaching materials, assigning tasks during

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class, guiding and organizing students' independent learning, and answering students' confusion in learning after class to realize the meaning of knowledge After the class, we can answer students' questions and achieve meaningful knowledge construction.

6.4. Blended Learning Theory

Blended learning theory is developed in response to the current information technology in education, which advocates that traditional learning and digital learning complement each other. The basic spirit of blended learning theory is to "reduce the center and strengthen the combination", paying attention to digital learning to serve traditional learning and not to ignore traditional learning methods. In the teaching of university IT online courses, it means "combining online and offline", using online platform to assist offline teaching, fully combining the two, taking into account the advantages of online teaching and traditional teaching, and creating efficient classrooms.

7. Construction of OBE Education Model for University IT Courses

7.1. Origin and System Elements of OBE Education Model

(1) The origin of OBE education model OBE is an education model based on outcome or output-oriented, which was initially applied by the United States and Australia and other countries in their basic education reform. Starting from the 1990s, member countries of the Washington Agreement, such as the United States, the United Kingdom, and Canada, adopted the OBE model as the mainstream concept of their educational reforms. The OBE education concept emphasizes student learning outcomes, focuses on the output of the teaching and learning process rather than its input, and requires the reverse design of teaching and learning activities with students' learning outputs as the starting point [34]. In this study, under the background of education informatization, the teaching reform practice of university IT courses based on the OBE education concept, combined with the current teaching situation of university IT courses and with the help of digital superstar platform, explores how to build an OBE teaching model suitable for university IT courses.

(2) Elements of OBE education model system The OBE education model is a structural model for organizing, implementing and evaluating education centered on the expected learning output [35]. Later various countries as well as various disciplines have carried out the exploration and practice of OBE teaching model, and Achaya pointed out that OBE teaching model is mainly through four links: defining (defining learning outputs) Realizing (realizing learning outputs), Assessing (assessing learning outputs), and Using (using learning outputs). Similarly, China has also explored and applied the OBE teaching model, pointing out five key implementation points, or critical steps of OBE: defining learning outcomes, constructing curriculum, determining teaching strategies, self-referencing evaluation, and reaching the summit level by level. In general, the OBE education model is not a fixed one, but it must have the following three structural elements: clarifying objectives, carrying out teaching and learning, and evaluating outcomes. And the OBE teaching model can only be improved and adjusted in the continuous practical application of major disciplines in order to achieve good results.

7.2. Features of OBE Education Model the OBE Education Model Has the Following Features.

(1) Orientation

The OBE model must first clarify the learning outcomes, emphasizing a student-centered approach in which the teacher draws a clear blueprint of the learning outcomes for the students and outlines which competencies are essential, making it clear what the students can do rather than what they know. Emphasis on students having a clear idea of learning goals and expected

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performance from the outset, teachers being clearer about how to assist students in their learning, and teachers and students working as partners to achieve the learning outcomes.

(2) Fairness

The OBE teaching model pays full attention to the individual development of each student, ensures that each student has the opportunity to achieve learning outcomes, reserves learning space for students, flexibly adapts to the learning needs of each student, and treats all students equally without differentiating between the three, six, and nine classes in evaluation, firmly believing that each student is a successful learner.

(3) Synergy

The OBE model does not exist in isolation; it emphasizes the integration of knowledge, and each part of learning is closely linked to the achievement of learning outcomes. It also emphasizes the integration on learning, advocates cooperative learning, achieving progress together through teamwork, emphasizes students' self-improvement, no longer competing with each other, and realizes an atmosphere of harmonious interaction among students; (4) Challenging, the OBE teaching model does not just stay at the knowledge level, but focuses more on the competence orientation and its own future development. It is a research-based teaching model rather than an irrigation-based teaching model, which emphasizes students to complete challenging tasks, such as activity organization, task-driven, and reporting presentation, to encourage students' deep learning and innovative ability development.

8. Construction of OBE Education Model for University IT Online Open Courses

After analyzing the structural elements of the OBE education model, this study builds the OBE education model for university information technology online open courses based on the characteristics of the information technology discipline and incorporating OBE features. The university IT course is a subject that integrates operation, technology, practice and inquiry. The course objectives focus on the cultivation of skills and emotional goals, and emphasize the adaptation of things to various social needs by transforming them. The content setting and curriculum implementation are obviously popular and contemporary, and the cultivation of talents is also up-to-date and integrated with the society and life reality to make them adapt to the information age of rapid technological development. The teaching concept is oriented to all students, no matter what environment they are in and what traits they have, they all have the opportunity to receive IT education, and should focus on coordinating the contradiction between students' individuality and the uniform standard of teaching. The teaching value adheres to the idea of people-oriented, based on value guidance and independent construction, advocates independent, cooperative and inquiry-based learning, and promotes students' personalized development. Therefore, this study constructs an OBE education model for university IT online open courses, which mainly contains three links: clarifying learning objectives, carrying out learning activities, and evaluating learning outcomes, in response to the characteristics of the IT subject in terms of goal concept, content modules, course practice, and value orientation. These three links are step-by-step and interrelated, all centered on achieving learning outputs. And combined with the Super Star online open platform, the model is maximized to meet the needs of the model, improve various needs as much as possible, promote student interaction and communication, and improve classroom efficiency. The OBE teaching model of university information technology online open course built by the author combined with Super Star online open platform.

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9. Design of University Information Technology Online Open Course Based on OBE Concept

9.1 Course orientation The course name of this course is "Python", based on the actual needs of information technology subject points and student learning, combined with the OBE education concept, the online open course is built on the SuperStar platform, aiming to improve students' information technology knowledge skills, cultivate students' information literacy, achieve an efficient information technology classroom, and contribute to the construction of university information technology online open courses.

9.2 Course Objective Design

In the current practical teaching of information technology, students have a vague concept of the goal, some even do not know what they are learning, teachers do not think deeply enough about the goal and ignore the cultivation of information technology literacy, resulting in the current information technology classroom only focuses on explicit knowledge and stays at a superficial level, without touching the implicit knowledge and connotation development of information technology. Therefore, this study develops three-dimensional objectives according to Bloom's taxonomy of teaching objectives, while focusing on the relationship with information literacy and combining the OBE concept with employment-oriented and competency-based objective design. The design of this course on learning objectives is mainly reflected in the first and second chapters, the first chapter is the course overview, a total of three subsections, the first section of the course basic information, mainly about the introduction of the information technology course, including the university information technology course standards, course orientation and course guidance outline, this part is mainly to let students have a basic understanding of the course, know the meaning of their study of the course, to achieve what kind of The second section is the IT training objectives. The second section is the information technology training objectives, which introduces the current status of the information technology curriculum, the general objectives of training, three-dimensional objectives, competence objectives, information literacy and the relationship between training objectives and information literacy, so that students know what knowledge they need to master, what abilities they need to acquire, and what information literacy they need to achieve in learning information technology. The third section is the curriculum framework, which is the general framework designed based on the objectives of the IT curriculum and the specific framework of each unit. In addition, the first section of each chapter is "What You Need to Learn", which is designed to let students know the learning objectives of the chapter, what knowledge they need to master, what outcomes they need to achieve, and to have a clear understanding of the objectives. The chapter on operational skills also includes an introduction to related careers, so that students can have a goal-oriented approach to their future career, apply their knowledge and skills to their future, and form a clear self-plan.

9.3 Course Evaluation Design

Learning evaluation principles (1) process + result evaluation should focus on the student learning process, such as class performance, regular grades, etc., not to the last final exam results as the final grade, to combine the process and results. And the purpose of evaluation is not to a score, but to the future development of students as the goal, to help students achieve the expected learning results. (2) Focus on diversified evaluation subjects should be diversified, not the traditional teacher evaluation, to focus on student evaluation, student-oriented, teacher-assisted, including student self-assessment, mutual evaluation within the group and inter-group evaluation, should listen to more students' opinions, with the help of the discussion forum function, students and teachers to participate in the evaluation. (3) Focus on emotion, self-referential assessment should focus on emotional interaction, strengthen communication between teachers and students, students and students, adopt self-referential assessment,

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emphasize the value and satisfaction of the realized learning outcomes, focus on students' personal self-progress, ensure that students can all reach their goals, do not emphasize the comparison between students, and create a good atmosphere of mutual help and harmony and win-win situation. Grading principles Grading principles include usual grades, final grades and additional grades. The usual grade accounts for 50%, including the completion of platform task points, such as the completion of videos, scores of test questions of each chapter, etc. The Super Star platform can count the students' completion situation. There is also student classroom performance, including attendance, class participation, presentation and communication level, etc., which is scored by the classroom evaluation form. The final grade accounts for 50%, including the theoretical paper score, the operation questions on the computer exam score and the practical large assignments, additional grade a total of 5 points, the teacher according to the career report submitted by the students, to score, and finally the total score is calculated together, only for the final grade of students.

10. Specific Design of Learning Evaluation

The learning evaluation of this study is divided into theory class evaluation and operation class evaluation. The evaluation of the theory class is an online multiple-choice quiz, each section will have a "challenge, do you dare to come", the knowledge points of the section will be designed in the form of multiple-choice questions, and each unit will have a "unit test", and there will also be a mid-term and final exam to test the students' learning achievements, find students' weaknesses and make targeted teaching. Weaknesses and weaknesses will be identified for targeted teaching. The evaluation of operation class is combined with the "2016 Information Self-Assessment Test" system to test students' software operation, which will calculate and count students' scores of operation questions. In addition, each chapter design "I learned" section, one is to test the students' knowledge mastery of the chapter through quizzes, and the other is to share their gains through the learning of the chapter, the purpose is to test whether students have achieved the chapter learning objectives and what learning outcomes they have achieved. Chapter 11 "comprehensive test" is to test the students' comprehensive learning results and produce multimedia works to evaluate the students' comprehensive ability through the learning of this course. The career planning assignment in this chapter is an additional evaluation for students, and the evaluation scores are added to the students' additional scores to motivate them to learn and integrate their knowledge with real life. Research Summary This study has studied the relevant domestic and international literature on OBE and online open courses, and has a clear knowledge of OBE and a deeper understanding of the current situation and development of online open courses. On the basis of analyzing the characteristics of university IT subjects and students' learning characteristics, the problems of university IT classrooms were investigated and studied, and the OBE teaching model was constructed by drawing on the experience of the structural elements of OBE education model proposed by other famous scholars.

11. Summary

This paper builds an online open university IT course from the current situation of IT teaching and learning with the help of Super Star "PanAsian" online learning platform. With the help of information technology, we integrated learning resources, carried out teaching practice, developed multi-functional teaching, stimulated students' interest in learning, changed the traditional classroom teaching, innovated curriculum construction, and tried to contribute to the university IT teaching. Firstly, the researcher elaborates the background of the study and summarizes the current situation of research on OBE education concept and online open courses at home and abroad by reviewing the literature. After that, the research purpose,

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research significance and research method of this study are introduced, and the research value and innovation points of this study are found. Next, relevant concepts and theoretical bases are introduced. The theoretical support of this study mainly includes educational goal theory, Bloom's mastery learning theory, constructivist learning theory and blended learning theory, which lays a solid theoretical foundation for the later course design. Then, through field school research, questionnaires and interviews are taken to understand the basic status of university IT courses and discover the current teaching problems. Based on the existing problems, the feasibility and necessity of the OBE education concept were analyzed, and the framework of the OBE teaching model suitable for university IT was constructed, "clarify learning objectives - carry out learning activities - evaluate learning outcomes". On the basis of the constructed model, an online open university IT course was built on the basis of SuperStar's "Pan-Asia" online open platform, and the learning objectives, learning contents, learning strategies, learning activities, and learning evaluation were designed with students as the main focus. Finally, an experimental method was used to test the effectiveness of the OBE-based university IT online development course by selecting one theoretical class and one practical class, and setting up experimental classes and control classes. After comparing the learning results and the use effect of student teachers, scientific analysis and conclusion were made. the online open university IT course under the guidance of OBE education theory can improve students' independent learning ability, clarify students' learning goals, focus on students' future development, effectively achieve learning effectiveness, provide convenience for teachers' teaching and students' learning, and promote university IT course reform. The innovation of this study is that it enriches the research content of university IT teaching, combines the OBE education concept, and explores from the perspective of result orientation. It takes into full consideration the "top-down" idea, reverse design based on university IT learning objectives, focus on the cultivation of skills and emotional goals, meet students' individual needs, and improve students' ability to analyze and solve problems. Second, to adapt to the rapid information society, the development of online open platform, the use of information technology, the integration of modern learning resources, changing the traditional classroom teaching, stimulate students' learning enthusiasm and autonomy, to truly achieve efficient classroom.

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