Research on Curriculum Reform of Computer Major Based on Obe Model

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Abstract: Today, with the rapid development of information technology, computers are regarded as one of the three essential survival skills in the 21st century. For this reason, computer professional courses are being paid more and more attention. The essence of OBE is an educational concept with students as the main body and learning results as the driving force. In the process of personnel training, it emphasizes what tasks students can accomplish and what abilities they can acquire. All teaching activities are carried out around learning results. OBE is a core concept of engineering education certification, so it is particularly urgent to carry out teaching reform research under the guidance of OBE concept. The internationalization process of Higher Engineering Education in China is accelerating day by day, which puts forward higher requirements for innovative engineering talents and engineers to deal with complex system problems. In this paper, the current computer professional ability training problem, analysis of today's social demand for high-quality innovative talents, computer professional curriculum reform ideas based on the OBE model.

1. Introduction

The construction of curriculum group through the integration of relevant courses, the establishment of a curriculum system with optimized structure and organic integration of content is an important condition for training applied talents, which can better promote the realization of professional training objectives [1]. Today, with the rapid development of information technology, computers are regarded as one of the three essential survival skills in the 21st century. For this reason, computer professional courses are being paid more and more attention. Results-oriented education refers to the goal of teaching design and teaching implementation based on the final learning results obtained by students through the education process. The essence of OBE is a student-centered and results-driven educational philosophy. In the process of personnel training, it emphasizes what tasks students can accomplish and what abilities they can acquire. All teaching activities are carried out around learning results [2]. The training goal of undergraduate students majoring in computer science and technology is centered on the training of the application ability of computer technology, and is committed to training students' ability to analyze and solve problems, autonomous learning and lifelong learning ability, innovation consciousness and entrepreneurship ability, team cooperation and communication ability [3]. Judging from the current status of the computer major curriculum, the quality and efficiency of teaching have not been effectively guaranteed because of its strong operability. The in-depth development of economic globalization has made the current university education face the severe challenge of talent training internationalization.

To meet the needs of national and social development, follow the laws of education and the growth of talents, explore multiple training methods, pay attention to the different characteristics and personality differences of students, develop the potential of each student's advantage, and promote the reform of teaching management systems such as OBE teaching and tutoring [4]. The course design of computer major is a highly targeted practical teaching link. Students will concentrate on two weeks after completing all theoretical courses and complete one or several project design practice activities in a teamwork manner [5]. OBE is a core concept of engineering education certification, so it is particularly urgent to carry out teaching reform research under the guidance of OBE concept. Curriculum design courses are designed to strengthen and expand what they have learned, and enable students to combine theoretical knowledge with practical operations

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through a series of steps such as consulting data, analyzing topics, and determining design solutions, to improve their comprehensive application and innovation capabilities [6]. The teaching content cannot keep pace with the development of computer science, the rapid development of computer technology and network technology, new ideas, new technologies, and new methods are emerging endlessly, failing to penetrate the course teaching in a timely manner [7]. The internationalization of China's higher engineering education is accelerating, and higher requirements are placed on the ability of innovative engineering talents and engineers to deal with complex system problems [8]. This article mainly aims at the problems existing in the curriculum design of computer majors, and puts forward the teaching reform of curriculum design courses based on OBE concept. With a view to improving students 'comprehensive application ability and innovation ability, and training students' teamwork ability.

2. Innovative Personnel Training Mode

Teachers can also use OBE education mode to improve computer experiment teaching in the teaching process, so as to promote students' operation ability. In the student-centered teaching mode, students take the initiative to participate in the preview before class, take the initiative to participate in classroom learning, etc., thus continuously improving their ability to learn independently. Innovative talents should have the characteristics of professional, systematic and general knowledge, innovative and developmental ability, and coordinated development of quality. The results-oriented teaching mode based on OBE concept has changed the traditional evaluation mechanism. The traditional single examination mode has been replaced by the programmed comprehensive evaluation mode, which can cultivate and improve students' comprehensive application ability. Teachers' comments in OBE teaching mode have objectively evaluated the group's completion to a certain extent, but they are not quantitative. Innovation quality is the guarantee to cultivate and improve innovation ability [9]. Cultivating innovative quality requires students to have certain professional depth and professional ability. Professional education is a teaching system that focuses on the cultivation of the ability to solve complex systems engineering and covers the cultivation of knowledge, ability and quality. It is a continuation of the general education to cultivate students' research ability, innovative and competitive ability and improve students' comprehensive quality. According to the pre-determined candidates, focus on presenting the problem-solving process, not only reporting the results of each group, but also presenting the problem-solving process, people's opinions and the formation of the problem-solving route.

The teaching under OBE education mode focuses on the improvement of students' ability, while the traditional assessment method is measured by scores, which cannot accurately evaluate the students' ability acquisition. The cultivation of innovation ability requires not only broad knowledge and international vision, but also active innovation consciousness and innovative thinking as well as engineering background knowledge, analysis and problem-solving ability. In order to ensure that each course group can complete the predetermined teaching objectives and enable each course group to cooperate with each other, each course group has designated a person in charge. The person in charge of each course group requires the lecturers of the courses to formulate detailed teaching plans according to the syllabus and submit them to the person in charge for review [10]. In the course design process, each team will be checked periodically to check the progress of the project, whether the team members design according to the design requirements, to understand the problems each member faces in the project development process, and their ability to analyze and solve problems [11]. In order to avoid students' simple inheritance of knowledge in the learning process, teachers set up an exploratory environment in the teaching process, using heuristic, concept map and other teaching methods. The OBE education concept is mainly driven by the learning effect of students, emphasizing the active participation of students to achieve the corresponding ability standards.

3. The Curriculum Strategy of Computer Specialty under the Obe Education Mode

3.1 Improve the Teaching of Computer Theory

Computer theory teaching, as a relatively important component of computer professional courses, is also an important process to cultivate students' ability of self-study, understanding, thinking and application. When teachers carry out theoretical teaching and carry out teaching according to OBE education mode, they should pay attention to whether the students have reached the expected ability and level in the learning process, instead of merely mastering theoretical knowledge in a boring way, so as to ensure that the students keep a good enthusiasm and enthusiasm for learning. Under the guidance of OBE concept, through the in-depth participation of enterprises and industry experts, and taking the cultivation of students' ability as the main line, students' learning output is clarified, the internal logical relationship between courses is clarified, and the teaching content is integrated and optimized [12]. In the traditional teaching process, teachers play a leading role in teaching. Teachers make teaching contents and teaching progress, ignoring the main position of students in teaching, and teachers do not make different teaching contents and progress for different students, thus causing students to lose interest in curriculum design courses. Teachers can adopt various teaching methods around the expected goal, for example, using case teaching method to carry out computer theory teaching, helping students to better understand new things with the help of cases, and actively guiding students to think about and explore the knowledge and problems behind the cases [13]. And take students as the center, focus on the cultivation of students' ability, make clear the learning output results, reasonably decompose the requirements of ability cultivation, and allocate them to the teaching of relevant courses. To construct a progressive and modular teaching system of ability training, so that the ability setting requirements of the course groups including courses are coordinated and supplemented with each other, while the course groups form a progressive relationship layer by layer.

Only by establishing a reasonable evaluation system can students' interest in learning be continuously stimulated, and students' ability to solve problems, team cooperation, communication and innovation and entrepreneurship be cultivated. The concept of OBE mode is to break through the traditional teacher-centered educational set, emphasize the subject position of the audience, give full play to the subjective initiative of the students, and point out that the ultimate goal of teaching is to cultivate the students' ability, rather than simply mastering knowledge. The traditional teaching process pays more attention to students' mastery of theoretical knowledge and ignores students' learning results. As to what abilities students will have after completing a course and whether they will reach the training goal, it is not comprehensive to assess with only one paper, and it is difficult to grasp the real situation of students. Effective feedback and reflection mechanisms should be established in the teaching process to help teachers grasp the learning results of students in a timely manner, so that students can be targeted to answer questions and guidance, and the teaching effect can be improved. In order to ensure the orderly development of teaching activities, questions must be raised scientifically. The questions need to bear the key knowledge points of chapters. The question setting should be enlightening and can stimulate students' desire to explore.

3.2 Improving Computer Experiment Teaching

Starting from the reality, the curriculum design for computer major provides students with some project topics and systematically arranges the content and process of curriculum design. To carry out innovative activities in the field of engineering requires not only a solid grasp of engineering principles, engineering techniques and theoretical knowledge of this major, but also knowledge of relevant disciplines, even marginal disciplines and humanities and social sciences. In addition to the above two points, the application of OBE education mode in the course of computer major requires teachers to improve assessment methods in the actual teaching process and actively construct diversified course assessment methods for students [14]. In computer major courses, practical operation is the key teaching content, and teachers innovate in accordance with the OBE education concept in teaching, they need to formulate clear goals in accordance with the actual situation of

students, and then develop students' computer operation ability in accordance with the principle of gradual and orderly, so that Realize the experimental teaching method based on the output of learning results to maximize the level of students' computer operation. In the process of education, a curriculum system should be set up according to the four-in-one ability training goal to guide students to realize the coordinated development of knowledge, ability and quality.

After the course design, instruct the teacher to organize students to conduct on-site defense of the course design conclusions. During the defense process, the participating students must answer the questions raised by the teacher or other group of students. Aiming at the problem that traditional examinations are mainly based on knowledge assessment, and there are too many objective questions that are difficult to reflect the requirements for competency assessment, questions are submitted in strict accordance with the requirements for competency development in each course. Heuristic teaching methods can stimulate students 'learning interest, guide students to develop innovative thinking on the basis of inheritance, cultivate innovative consciousness, explore and discover unsolved problems of previous generations, and improve students' ability to recognize and think logically [15]. In the program development module, through the software tools and environment elementary course, students can develop, select and use appropriate modern tools when analyzing and designing complex engineering problems. In the process of completing tasks, students should think, transform, and flexibly apply what they have learned. Therefore, this model effectively cultivates students 'innovative consciousness, and improves students' ability to think independently and to innovate. Innovation-driven development requires innovative talents. Innovative thinking is the basis of innovation ability. Class teaching is the main form of teaching implementation and the carrier for cultivating innovative thinking and ability.

4. Conclusion

The construction of the curriculum group can make the courses coordinate with each other, connect the various abilities cultivated by the students, promote the improvement of the teaching quality of computer specialty, and meet the needs of engineering education certification. In order to effectively apply the OBE education model to computer professional courses, teachers need to continuously optimize the teaching content and methods in actual teaching, and at the same time formulate a corresponding evaluation system in accordance with the actual situation, and truly play OBE education effectively from computer experimental teaching. The value of the model. Under the guidance of the OBE concept, starting from the needs of the industry, this paper focuses on the cultivation of students' software system R & D ability, and defines the cultivation requirements of the ability supported by each course group. In order to ensure the orderly development of teaching activities, it is necessary to put forward questions scientifically. The questions need to bear the key knowledge points of the chapters, and the setting of questions should be enlightening, which can stimulate the students' desire to explore. It is worthy of the general attention of the majority of Chinese educators to carry out the achievement oriented teaching mode in an all-round way. The teaching reform based on the OBE concept has greatly increased the workload of teachers. Teachers need to make corresponding teaching plans for different students according to different training objectives in each link of teaching.

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