

Research on Teaching Reform of Civil Engineering Specialty Based on OBE Concept

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Fund Project: Research on the teaching reform of civil engineering specialty based on OBE concept, and a major school-level teaching and research project; Exploration and research on the training model of civil engineering professionals in applied universities under the background of “new engineering”, school-level youth teaching and research projects.

Abstract: In recent years, the OBE teaching concept has attracted much attention. Compared with traditional teaching, this learning outcome-oriented teaching method has a great advantage. It is widely used in engineering teaching, especially for civil engineering majors, which can effectively improve Teaching Quality. This article focuses on the teaching reform of civil engineering based on the OBE concept, expounds the overview and characteristics of the OBE education concept, compares the differences between the OBE teaching model and the traditional teaching model, and combines the current civil engineering major courses in higher vocational colleges. Practical issues are analyzed. On the premise that students are the center of the entire teaching activity, and guided by learning results, four suggestions are put forward for the teaching reform of civil engineering based on the OBE concept, in order to truly improve the engineering students' Core literacy promotes the training process of engineering professionals in my country.

Keywords: OBE Concept; Civil Engineering Specialty; Teaching Reform

With the rapid development of the national economy and people's increasing demands on material life, the construction speed and difficulty of civil engineering projects are increasing, which makes the civil engineering industry's demand for professional talents increasing, and the requirements for professional talents are also changing. The teaching of civil engineering majors in higher vocational colleges is also constantly reformed. From CDIO to OBE, its goals have not changed. It is hoped that through teaching reforms, the training quality of civil engineering students in higher vocational colleges will be improved, and the civil engineering construction transports high-quality professionals^[1].

1. Overview and characteristics of OBE concept

1.1 Overview of OBE concept

The OBE concept is the current internationally recognized engineering professional education concept. It is a result-oriented education concept that transforms the traditional teaching from being teacher-led to focusing on students' dominant position. The OBE concept focuses on the improvement of students' application ability and practical operation ability. Under the guidance of this theory, the teaching activities of civil engineering majors focus on how to achieve the expected learning effect.

1.2 Features of OBE Concept

1.2.1 Develop a talent training plan around students

The talent training plan is a guiding document for teachers to carry out teaching. All theoretical and practical teaching

should be strictly implemented in strict accordance with the established talent training plan to complete the talent training task without compromise. The OBE concept requires colleges and universities to closely focus on students when formulating talent training programs, especially civil engineering majors, and implement teaching according to the characteristics and needs of students.

1.2.2 Allocate teaching practice resources around students

After formulating a talent training plan, teachers need to implement corresponding hardware and software for teaching, such as multimedia library, experimental training room, simulation platform, practice base, etc. The OBE concept requires colleges and universities to refer to the actual situation of their own college students in the allocation of such teaching practice resources, so as to maximize the protection of students' learning needs^[2].

1.2.3 Carry out teacher teaching evaluation around students

Under the traditional teaching concept, the evaluation of the teaching quality of civil engineering teachers mainly depends on the tripartite evaluation of leaders, colleagues and students. However, the OBE concept requires the evaluation of the teaching of civil engineering majors to rely more on student evaluation. This allows teachers to continuously improve the teaching model and improve the quality of education based on student feedback.

2. The difference between the teaching mode under the OBE concept and the traditional teaching mode

2.1 The traditional teaching mode of civil engineering majors focuses on test scores

In the traditional teaching mode, the teaching of civil engineering is more about the teacher's full explanation, and the students passively accept knowledge. In the evaluation of the teacher's teaching quality and the students' academic performance, the test scores are largely referred to, while the students' test scores the level of is mainly determined by the memory of students. On the one hand, this teaching mode restricts the expansion of teaching methods, makes the classroom atmosphere too depressing, and cannot stimulate the learning initiative of vocational students. On the other hand, this kind of classroom knowledge that relies solely on memory is more than enough to cope with the exam, but it is helpless in the face of practical problems in civil engineering, and cannot make sufficient preparations for civil engineering graduates to successfully carry out practical work in advance.

2.2 The OBE teaching mode of civil engineering majors focuses on practical ability

Under the OBE education model, the civil engineering major focuses on the cultivation of students' comprehensive practical ability. In the process of completing the tasks assigned by the teachers, the students improve their professional skills and professionalism. Under this educational model, students must exercise their ability to analyze and solve problems through independent learning, and complete particularly complex tasks in groups, so as to cultivate students' organizational planning skills and teamwork spirit. This OBE teaching mode is quite different from the traditional teaching mode and has more obvious teaching advantages.

3. Problems existing in civil engineering teaching based on OBE concept

3.1 Teaching content cannot keep up with the needs of industrial technology development

The teaching content of civil engineering courses is very extensive, including very professional theoretical knowledge, as well as very rigorous experimental phenomena. This is a big challenge for civil engineering students, and some basic knowledge is weak. Of higher vocational students have a fear of difficulties and study in order to cope with traditional teaching examinations. This kind of lack of subjective initiative can only stay at the book level. Coupled with the continuous application of new technologies in civil engineering, civil engineering professionals trained by traditional teaching methods are increasingly unable to meet the needs of industrial development.

3.2 Practical teaching cannot keep up with the development needs of students

Civil engineering is a very practical subject, but in the current civil engineering teaching in higher vocational colleges, teachers still focus on theoretical knowledge and ignore practical teaching, or in the development of practical teaching, Teachers teach students to learn mainly passively, ignoring students' independent thinking and personal participation. This kind of practical teaching that does not aim at students' acquiring ability is not conducive to the improvement of practical ability and comprehensive quality of civil engineering vocational students.

3.3 The assessment form cannot keep up with the comprehensive and effective testing needs

In the evaluation form for civil engineering students, more emphasis is placed on test results, including the results of theoretical courses and practical courses. This makes higher vocational students not pay enough attention to the usual learning process and they are not motivated to learn. For example, classroom attendance rate, classroom activity participation, usual homework completion quality, group activity enthusiasm, etc., these dimensions can truly reflect the learning status of students, some are not included in the assessment system, some are relatively low, leading to the entire civil engineering professional. The assessment form cannot comprehensively and effectively detect students' academic performance.

4. Civil engineering teaching reform based on OBE concept

4.1 Reform of talent training goals

The civil engineering teaching reform based on the OBE concept needs to start with the transformation of talent training goals and reposition the clear talent training goals. The standards for talents are mainly engineering practice capabilities, supplemented by innovative practices and technical practices. OBE's teaching philosophy is result-oriented, with the goal of cultivating research, innovative, comprehensive, and application-oriented talents, and carry out the teaching reform of civil engineering.

4.2 Reform of the teaching curriculum system

The teaching curriculum system is the basis for teachers to carry out teaching work. The civil engineering major based on the OBE education philosophy should build a new curriculum system around the expansion of students' practical ability, professional theoretical knowledge and comprehensive quality. On the basis of insisting on the teaching of theoretical knowledge, increase the appropriate amount of scientific and technological innovation practical activities and scientific research projects. Through these courses, students' innovative spirit and scientific spirit can be cultivated and practical ability can be improved.

4.3 Reform of practical teaching mode

Civil engineering majors based on the OBE concept should take the cultivation of students' practical ability as the main line and run through the entire teaching process. Higher vocational colleges should implement practical teaching in as many ways as possible. On the one hand, separate practical courses are set up through the experimental training room in the school to better integrate theoretical teaching and practical teaching; on the other hand, concentrated internship training can be carried out in off-campus cooperative bases, allowing students to exercise in real civil engineering projects. The ability to analyze problems and find solutions in the face of problems, so as to enhance their comprehensive practical capabilities.

4.4 Reform of Course Teaching Evaluation

In order to achieve the curriculum goals of civil engineering courses and students' learning effectiveness, OBE's concept puts the evaluation of the course teaching on the usual assessment, and tests each assessment point separately, which can greatly arouse students' enthusiasm for learning. The final learning results and expectations in the professional field after graduation can achieve good results, and finally complete the teaching goals.

5. Conclusion

From the above analysis, it is not difficult to see that the teaching of civil engineering based on the OBE concept is based on the needs of the civil engineering industry, with student development as the teaching center, and a top-down reverse curriculum structure design. Teachers should The OBE concept has been run through the entire teaching practice, guided by learning outcomes, and guided students to carry out independent study, and the final learning outcomes of students are quantitatively evaluated in stages to form continuous teaching improvements. This teaching mode is conducive to civil engineering the improvement of professional students' practical ability, engineering ability and comprehensive literacy.

References

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