

Engineering Survey Course Reform of Applied Civil Engineering Professional Talents Training System

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Abstracts. From the perspective of the teaching reform of engineering survey courses for civil engineering majors and the cultivation of applied talents, We studied the teaching content, teaching methods, and assessment methods. In order to grasp the key link of the teaching reform and cultivate more application-oriented talents to meet the needs of the society.

Introduction

With the rapid development of China's economy and the transformation and upgrading of traditional industries, engineering education is now highly valued by countries all over the world. In recent years, China has promoted innovation-driven development by implementing such major strategies as “the Belt and Road”, “made in China 2025” and “Internet plus”. The new economy represented by new technologies, new business forms, new models and new industries, is developing vigorously and has put forward higher requirements for engineering and technical personnel. A higher standard has been set for the comprehensive quality of students. Reform and innovation of existing engineering education is a major challenge to China's higher education. In order to meet the challenges of a new round of scientific and technological revolution and industrial transformation, and to cultivate a large number of diversified, innovative and excellent engineering and technical personnel, to support industrial transformation and upgrading, the construction of application-oriented universities has become an urgent and long-term strategy. Application-oriented universities focus on the word “application”. The fundamental goal is to cultivate application-oriented professionals who can skillfully use basic knowledge to solve practical problems, who have certain innovation ability and strong practical ability, and who can adapt to local and industrial needs.

Application-oriented talents refer to a special type of talents who can apply professional knowledge and skills to professional social practice. They are technical or professional talents who have a good command of basic knowledge and skills of social production or social activities and they are engaged in front-line production. In recent years, developing application-oriented undergraduate education and cultivating application-oriented talents at the undergraduate level have become the educational purposes and training objectives of many colleges and universities. Starting from the training objective of application-oriented undergraduate education and combining with the teaching status and characteristics of engineering surveying course, we systematically analyze the problems existing in the traditional teaching of this course and propose solutions.

Select teaching Contents and Keep Pace with the Times

In recent years, surveying and mapping science has developed rapidly, with new theories, technologies and methods emerging constantly. New theories, technologies and methods are emerging. Surveying and mapping high and new technology represented by GPS, RS and GIS has long been applied in the production practice of surveying and mapping enterprises. In the face of the rapid development of surveying and mapping technology, the old teaching content has been unable to adapt to the needs of contemporary society. Therefore, in the case of reducing the number of class hours, it is necessary to select the teaching content. we should delete some contents that

have been eliminated, and add some current surveying and mapping new technologies and methods.

In addition, some chapters have too much theoretical analysis and formula derivation. The formula is complicated and the calculation is tedious. Especially for students who are not major in surveying and mapping, there is no great value. Some contents can be deleted as appropriate. For engineering construction, students should master the measuring method and calculation principle of traverse survey. Tedious calculation can be completely achieved by professional software. Therefore, on the basis of understanding and mastering the basic principles, learning the corresponding computing software can better adapt to the needs of society.

Enrich Teaching Methods and Teach Students According to Their Aptitude

Facing the status of less class hours and more teaching information, teaching must be less but better, with emphasis on key points and difficulties. It is a higher requirement for teachers. Traditional “cramming” is no longer appropriate. As a teacher, he must understand and master the content of the course, summarize the key points and difficulties, and explain them in detail, so as to achieve the teaching effect of simple but profound. For the part that emphasizes calculation and derivation, we can use blackboard teaching. Students can work with the teacher to derive the calculation, which is more conducive to students' profound understanding of this part of knowledge. As for the structure and use of the instrument, demonstration teaching is adopted to make abstract knowledge concrete. Through the demonstration operation, it can deepen the student's intuitive image and the understanding. For methods, processes and other contents, the advantages of multimedia courseware can be given. Interspersed with pictures and animations, students are more likely to understand and accept, and absorb a large amount of knowledge.

In a word, teachers should adopt various teaching methods flexibly to achieve the best teaching effect. In class, teachers and students take the interactive teaching mode. Students are free to speak if they have questions. In view of the same question, students can express their views on different points of view. Teachers should not imprison students' thinking. Through preview, thinking and discussion, students find the problems by themselves, and then analyze and solve them. Students become the subject of learning. They change from passive learning to active learning.

We should adopt proper methods in teaching combined with the objects of current teaching. The current students are “post-90s”. They are full of personality and active thinking. As teachers, we should use their advantages and improve students' interest in learning. It is necessary to correctly handle the relationship between teaching and learning[2]. Students' respect for teachers comes not only from their respect for knowledge, but also from the teacher's integrity personality charm and teacher's affinity. As teachers, we should be full of love for students. It is called “teacher love”. This kind of love is the emotional basis for teachers to educate students. Once students feel this emotion, they will “get close to their teachers” and “trust their way”.

Strengthen Practical Teaching and Promote Learning through Competition

The minister of education has said: “we will vigorously strengthen practical teaching. Knowledge comes from practice. Ability comes from practice. And quality needs to be cultivated in practice. Various practical teaching links are especially important for cultivating students' practical ability and innovative ability. Practice is crucial to the growth of students.” [3]. Engineering surveying is a practical course. Strengthening practical teaching and cultivating students' practical ability are the top priorities of this course. First of all, the university should improve their practical teaching conditions, strengthen their hardware construction, and purchase or rent necessary new instruments and equipment; Standardize the practice site and establish a relatively stable practice base. Secondly, theory and practical teaching should be better combined. Teachers put the theoretical lessons about instrument operation outside class; explain them while operating the instrument. Students observe while learning, remember while operating. In this way, students will have a stronger sense of participation and learning enthusiasm. In addition, the old model of in-class practice can be changed. Teachers can change verification practice to design practice. We set the

questions and students think for themselves and complete the practice mission. In this way, students can change passive learning into active learning, which is conducive to cultivating their independent thinking and problem-solving ability.

In order to stimulate students' learning enthusiasm and test their comprehensive practical ability, survey skill's competitions of different forms can be organized. The "second classroom" of application-oriented talent training can be established. Students can take the initiative to practice in their spare time to achieve the goal of promoting learning and training through competition. The competition can cultivate the spirit of unity and cooperation of students and practical attitude of seeking truth from facts. At the same time, students are encouraged to learn professional skills, in order to lay a solid foundation for the future to work, and to become a solid professional skills of applied talents to prepare.

Strengthen the Process Examination and Standardize the Examination System

At present, the examination form of engineering surveying is generally 70% of the exam score and 30% of the usual score. In the final examination, the theoretical knowledge is often composed of choice, filling in the blanks, noun explanation, short answer and other questions. The proportion of practical ability is small, causing students to form the wrong idea of paying more attention to theory than to practice. As a result, most students have poor practical ability and poor comprehensive ability. In order to change this situation, we can increase the proportion of process examination, reduce the proportion of summative examination. And we can combine the two kinds of assessment methods. The function of process examination is to reflect students' learning situation in time. It encourage students to actively reflect and summarize the learning process. It is necessary to pay attention to the process results of students' intelligence development in the teaching process, and make timely judgment and objective evaluation on students' learning quality level. Therefore, a balance should be found between process examination and summative examination, and relevant methods of process examination should be developed for different courses. By recording the development of students bit by bit, good records and the joy of success can promote the development of students, so that students continue to move forward in a good atmosphere. Process assessment allows students to highlight their strengths and increase their confidence. In this way, students are concerned in the learning process. It can stimulate students' interest in learning effectively and maintain their enthusiasm for learning. At the same time, this can more comprehensive evaluation of students, but also conducive to the sustainable development of students.

Therefore, the way of curriculum examination should be constantly explored and reformed. Finally, a complete, reasonable and standardized assessment system can be formed.

Break Classroom Barriers and Learn the Whole Process

No matter how rich the traditional classroom content is, but the class hour requirements, class time is limited, so that college teachers often regrets the heart is superabundant but the lesson is insufficient. Not only that, students either feel that there is too little in the course or that the teaching is going too fast. As a result, no matter how good the teaching is, it is difficult to give full play to the real teaching effect. So we can try to break down the traditional 45 minute classroom barrier. Instead, students can learn the whole process before, during and after class. Before class, we assign learning tasks to students through the learning platform. Students can learn independently by consulting materials. In class, we can adopt project-driven teaching, demonstration, flipped teaching, competitive training, learning and doing, etc. After class, students can further expand and improve their ability to complete the whole process of learning.

Conclusion

It is the task given by The Times to cultivate applied talents in ordinary college. We should keep

pace with the times and build a teaching system that adapts to social development and scientific technological progress. For application-oriented colleges, we should adjust the curriculum teaching plan according to the needs of society and employers. As long as we study carefully, identify problems in time, formulate and implement feasible reform plans. And we constantly explore, summarize and improve in teaching, can ensure the teaching quality of the course. We will continue to deepen the reform of the curriculum, expand the job market, and train qualified professionals in civil engineering[4].

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