

New Discussion on Education Contents in Chinese-foreign Cooperative Education of Civil Engineering Specialty under the Background of "One Belt and One Road"

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Abstract: Proposing of "One Belt and One Road" development strategy puts forward new requirements for civil engineering talents, at the same time, which has produced important influences on Chinese-foreign cooperation education of civil engineering specialty in our country. This paper focuses on the problems of English teaching, professional and technical knowledge and practice teaching of the civil engineering specialty in Chinese-foreign cooperation education, and some suggestions in view of the problems are presented.

Keywords: One belt and one road; Civil engineering specialty; Chinese-foreign cooperation education; Education contents

1. Introduction

In 2010, China issued the outline of national medium and long term education reform and development plan, which proposed "introducing high-quality education resources". Attract well-known overseas schools, educational and scientific research institutions and enterprises, and cooperate to establish educational and teaching, practical training, research institutions or projects "[1]. The internationalization process of "one belt and one road" strategy needs civil engineering specialty. To develop in the direction of high quality, intelligence and sustainability [2], which puts forward new challenges for Chinese foreign cooperation in running schools in China's major universities. At present, scholars have carried out a series of research on civil engineering personnel training mode, Faculty Construction and curriculum. Xie Jingsi [3] put forward new ideas on how to deal with the new situation positively, such as the establishment of civil engineering specialty, the mode of talent training, the construction of teaching staff and the cultivation of students' comprehensive quality, etc.; Jiao Huazhe and others [4] explored the teaching mode of Sino foreign cooperation in civil engineering specialty. Jin Zhibin [5] has carried out reforms in the aspects of College English curriculum, professional English, diversified construction of professional teaching materials, and cooperation between schools and enterprises.

Construction enterprises rely on the national "one belt and one way" strategy to actively explore overseas markets. However, due to the great differences in

industry norms, management systems and methods at home and abroad, it is necessary to have talents familiar with the international civil engineering market. However, there are still problems in the cultivation of Sino foreign cooperative talents in civil engineering, professional English teaching, curriculum and management system. This paper discusses the above aspects.

2. Current Situation and Problems of Sino Foreign Cooperation in Running Civil Engineering Schools

2.1. English teaching

The development of internationalization under the background of "one belt and one road" is especially important for the reform of English Teaching in civil engineering. [6] How to reform English Teaching in Chinese foreign cooperative education is a new challenge for college educators, which is embodied in the following two aspects:

2.1.1. Textbook selection

At present, there are many chapters and chapters in professional English textbooks, but the class hours are relatively few, so it is difficult to cover all knowledge points. Secondly, the content of the existing teaching materials is relatively backward, and the content of the cutting-edge technology in the project, such as BIM Technology, 3D printing of concrete and the application of new materials, is less. Therefore, it is necessary to improve the content of the teaching materials, and add

the knowledge of Engineering hotspot, new technology and new materials.

2.1.2. Teaching mode

At present, the teaching mode of civil engineering major in China is mostly confined to the traditional method of "professional vocabulary and expression grammar explanation text sentence translation". The overall learning effect of students is low. The international popular English teaching method "natural spelling" is almost not used, so students' knowledge mastery is not high.

2.2. Professional technical knowledge

At present, the civil engineering cooperative education pays more attention to the teaching of basic knowledge, but the teaching of emerging technologies has not kept up with the international trend, which is embodied in:

2.2.1. Weak software learning

With the development of civil engineering technology, international software such as BIM, ABAQUS, ANSYS and Midas have played an important role in the construction, design and scientific research of civil engineering. However, in the actual teaching, only a small number of courses for a certain software learning, resulting in the lack of practical software operation ability of students after graduation, which will affect the initial effect of the work.

2.2.2. Knowledge updating is slow

The application of new technologies and materials, such as prefabricated building, 3D printing of concrete and ultra-high performance concrete, makes the structure with higher strength and more economical emerge in endlessly. However, in the current Sino foreign cooperative education, the Chinese classroom teaching mainly focuses on the traditional civil engineering basic knowledge, which is rarely involved in the new field, so the breadth of students' knowledge is not enough to support them to solve the problems in their work and scientific research.

2.3. Practical teaching

The Sino foreign cooperation in running a school project is constantly providing international talents for the country. However, there are some problems in the process of Sino foreign cooperation in running a school:

2.3.1. Theory teaching and practice teaching cannot develop in balance

Because the nature of Sino foreign cooperative education projects determines the specialty and teaching particularity, there is a phenomenon of emphasizing the classroom and neglecting the practical teaching. It is

common for students to operate at full load in classroom teaching, especially in the whole process of foreign English teaching, to learn professional basic knowledge well requires a lot of efforts and little time for practical learning.

2.3.2. The school enterprise cooperation mechanism is not perfect

Although "one belt and one road" has led enterprises in many neighboring countries to participate in it, Chinese enterprises have also brought China's technology and standards to the world. However, enterprises attach more importance to economic benefits. It is becoming more and more difficult for schools and enterprises to set up outside school practice bases, especially in the aspects of "student management, safety and funds". Enthusiasm, students in practice need of resources can not be more integrated.

3. Suggestions and Measures for Chinese Foreign Cooperation in Running Schools

Based on the above analysis, this paper puts forward some suggestions on the problems existing in Chinese foreign cooperative education.

3.1. Professional English teaching reform

3.1.1. Enrich English teaching methods

Reform the traditional teaching method of teaching the knowledge acquired by students, introduce the result oriented OBE teaching concept, take students as the main body and teachers as the auxiliary teaching method. The teacher explains the key words, grammar and sentence patterns in class, and tells the structure and writing method of the English article. Students are required to consult, read and translate the literature after class, and return to the classroom with their own questions to find the teacher to answer the questions.

3.1.2. Strengthen the allocation of teachers

Chinese and foreign teachers should be reasonably integrated in the Sino foreign cooperative education projects, and English teaching courses should be allocated according to the teachers' styles. Foreign teachers can focus on the basic aspects of English language teaching and improve students' ability to use the language. Chinese teachers have experience in learning Chinese and English and can flexibly adjust teaching objectives in English teaching. Chinese teachers can visit foreign countries regularly to learn foreign teaching experience and improve their English teaching level. In addition, teachers of both sides can regularly organize seminars to exchange information and improve teaching level.

3.2. Enhance the learning of professional technical knowledge

3.2.1. Increase the class hours of software learning

In the course of Sino foreign cooperation in running schools, schools should increase software class hours, have a preliminary understanding of Midas, ABAQUS, ANSYS and other software, especially on the basis of English learning, strengthen the learning of English software, so as to facilitate the docking with foreign engineers in the work. Teachers use software to model and analyze specific engineering projects in combination with actual engineering cases, so as to strengthen the application of software by students. After class, arrange independent homework, improve students' ability of using software independently, and check students' mastery of software.

3.2.2. Add class hours for learning new technology and materials

New materials such as self compacting concrete, high performance concrete and super strength steel bar, as well as technologies such as 3D printing of concrete, prefabricated building and modular construction have been successfully used in various projects. New materials and new technologies can be added to the teaching, so as to understand the development direction of new materials and new technologies and keep up with the international trend of civil engineering.

3.3. Strengthen practical teaching

3.3.1. Balanced development of practical teaching and theoretical teaching

Practice teaching is an important part of Sino foreign cooperation project, so we should balance the development of practice teaching and theory teaching. School leaders should balance the theoretical and practical teaching hours in the allocation of class hours. At the same time, teachers should guide students to the practice site to learn and explain some technical points in practice. Through the cooperation, experience and exploration of teacher-student interaction, the seamless link between classroom and practical teaching can be realized. As students, they should actively participate in provincial or national high-level practical activities and competitions to consolidate theoretical knowledge in practice.

3.3.2. Strengthen the school enterprise cooperation mechanism of industry education integration

The Chinese and foreign sides jointly set up the "Sino foreign cooperative school enterprise cooperation

committee". The school is responsible for connecting with the enterprises involved in the "one belt and one way" construction and establishing a long-term cooperation system. Enterprises can also appoint technical backbones as graduation practice and design instructors to cultivate students' ability to participate in practical construction and design. In addition, the school can send teachers to enter the enterprise for practical training, bring practical experience into the theory classroom, and better integrate practical teaching and theoretical teaching.

4. Conclusion

In short, the Sino foreign cooperative education in civil engineering should fully rely on the development opportunity of "one belt and one road", combine the characteristics of civil engineering students, and implement the English teaching materials, teaching mode and teachers' strength. Strengthen the teaching of professional technical knowledge, especially the international general software teaching. We should give full play to the advantages of Chinese and foreign enterprises in the "one belt and one way", and establish a sound school enterprise cooperation mechanism to promote the development of practical teaching.

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