

Teaching Situation and Curriculum Reform of Specialty English for Civil Engineering

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ABSTRACT

In order to improve the teaching level of professional English for civil engineering, this article analyzes the current teaching situation of specialty English for civil engineering. With the increasing frequency of international cooperation in civil engineering, China urgently needs a large number of interdisciplinary talents who are both proficient in majors and proficient in English communication. Specialty English for civil engineering belongs to English for specific purposes, which is a course that closely combines English language and professional knowledge. However, there are many problems in teaching specialty English for civil engineering that restrict the teaching effect. This article combines the current civil engineering English teaching situation and analyzes the shortcomings and reasons in the teaching. These problems can be solved by improving the comprehensive quality of teachers, integrating teaching resources, adopting diversified teaching methods, and optimizing the evaluation mechanism.

Keywords: specialty English; civil engineering; teaching situation; curriculum reform

1. INTRODUCTION

With the development of science and technology and the gradual deepening of global economic integration, especially under the new situation of the "The Belt and Road" initiative at this stage, China's international cooperation in the field of civil engineering is becoming more frequent. More and more design companies and construction management companies in my country are going abroad to carry out civil engineering construction activities. The design and construction of some large-scale infrastructure projects are carried out through international bidding [1]. These changes have put forward higher requirements on the English level of civil engineering professionals, and there is an urgent need for colleges and universities to cultivate international high-end civil engineering talents who are proficient in professional knowledge and proficient in English.

College English teaching emphasizes the application of basic grammar, while professional English is different from traditional English teaching. Specialty English focuses more on the application and practice of language. The difference in learning content and purpose between the two causes the difference in teaching methods. College English teaching tends to instill one-way teaching behavior, while specialty English needs to cultivate the ability to use English for technical communication. The teaching mode that is out of practice is difficult to achieve the expected teaching effect. At present, in civil engineering specialty English teaching, the traditional "three singles" teaching mode is basically followed: unidirectional teaching

behavior, monotonic teaching form, and single teaching content, emphasizing the accumulation of vocabulary and lacking practical link settings. On the one hand, students are limited by lack of professional knowledge, difficult to learn, and lack of excellent practical textbooks, it is difficult to combine college English, professional knowledge with practical applications; on the other hand, the course assessment lacks process management and cannot provide motivation for students during the complete course study. Therefore, there is an urgent need to integrate practical aspects into the teaching reform of specialty English to improve the teaching effect.

2. FEATURES OF SPECIALTY ENGLISH COURSES FOR CIVIL ENGINEERING

Specialty English for civil engineering belongs to English for special purposes, and the purpose is to promote students to complete the transition from learning to the practical application of English knowledge. Specialty English courses are neither purely language courses nor purely professional courses. It is a course that combines language application and personal professional knowledge. The two complement each other and integrate language skills with professional knowledge [2]. Specialty English for civil engineering, as a medium of civil expertise and information transfer between countries, has become an important tool for the internationalization of construction projects. Specialty English for civil engineering involves many subjects and covers a wide range, mainly including Engineering mechanics, Soil mechanics and basic engineering, Concrete structure, Steel structure, Civil

engineering materials, Bridge engineering, Civil engineering construction, Engineering budget and other courses. It is required that when learning civil engineering professional English, you must have a certain specialty English vocabulary and proficient English grammar, so it has a higher demand on students' English basis.

3. THE APPLICATION SCOPE OF SPECIALTY ENGLISH FOR CIVIL ENGINEERING

3.1. To study abroad

At present, more and more college students are going abroad to study. Statistics show that China has become the world's largest source of international students, with an average of 300,000 to 400,000 international students studying abroad every year [3]. For this huge group, specialty English is an essential skill for them to learn professional knowledge. In addition to traditional listening, speaking, reading, and writing, professional knowledge learning requires a high level of specialty English ability, which requires a long period of professional training to meet this requirement. However, the current domestic study abroad exams still focus on IELTS, TOEFL and other basic living languages, and there is a lack of research on the application ability of scientific and technological English. As a result, a considerable number of international students will find it difficult to adapt to the curriculum within a certain period of time.

3.2. Foreign project exchange

There are more and more foreign-related civil engineering projects. For example, major projects such as the National Grand Theater are often open to international bidding, and domestic universities and construction companies are also actively exploring overseas markets to undertake international projects [4]. In the process of international project construction, the exchange of design specifications, construction drawings, bidding documents and other technical documents will inevitably come into contact with a large number of materials using specialty English as the carrier. Ensuring the accurate expression of professional knowledge is a prerequisite for ensuring the smooth development of the project. For example, the accurate understanding of scientific and technological terms such as "Moment", "Boring" and "Specific Gravity" in the use of international engineering specifications, the distinction between the severity of modal verbs such as "shall" and "must" in international bidding documents, and the use of passive language Comprehension of attitudes, long sentences, etc., all require practitioners to have a solid and strong specialty English application ability. From the perspective of the accuracy of understanding of

international engineering specifications and the control of the legal effects of international bidding documents, it is necessary to pay special attention to the training of engineering talents with professional knowledge of civil engineering and strong English practice. However, domestic technicians with rich professional knowledge and strong professional English skills are still scarce.

3.3. Reading and writing scientific papers

For students who participate in scientific research activities or need postgraduate studies, the reading and writing of scientific papers requires good specialty English skills. In addition to reading foreign literature, it is also necessary to have the ability to use keywords and other information to conduct literature search. Specialty English vocabulary is sometimes difficult to accurately grasp its true meaning, which not only requires a corresponding understanding of professional knowledge, but also good at searching based on the information that has been obtained to determine semantics.

3.4. Ability requirements and training

The teaching of specialty English for civil engineering should be designed according to the students' knowledge reserves, and the ability to use specialty English can be expanded and cultivated by extending the existing abilities. Undergraduates majoring in civil engineering have already mastered most of the major civil engineering courses, such as reinforced concrete structures, steel structures, and basic engineering, before taking specialty English courses, and they have certain professional knowledge. However, limited to the arrangement of class hours and lack of corresponding engineering experience, professional knowledge is relatively lacking in depth, especially the English expression of professional terms is often ignored. In addition to teaching professional vocabulary and expression, specialty English for civil engineering also requires students to master the ability to acquire, organize, read and communicate foreign language materials.

4. THE TEACHING SITUATION OF SPECIALTY ENGLISH FOR CIVIL ENGINEERING

In order to put forward the teaching reform plan of specialty English for civil engineering in a targeted manner, it is necessary to analyze its current situation and existing problems on the basis of combining the existing teaching resources, teaching modes, evaluation methods and teacher faculty construction.

4.1. Lack of attention

For a long time, most universities only pay attention to the pass rate of college English, and pay less attention to the performance of students, especially in the practical use of English. This results in students learning English only to pass the College English Test, and lack of awareness of the importance of this second language. Many schools set specialty English for civil engineering as a public elective course, and the assessment method often only requires the writing of a course paper, which greatly ignored the training of students' skills, and does not really understand the training goals and application prospects of the courses. It has never been clear that specialty English is a necessary and important skill for international engineering talents. Many teachers did not really think about how to increase students' interest in specialty English in their teaching. They adopted traditional teaching methods and used the books to teach the subjects according to the text, which made students lose their interest in learning. In addition, the vocabulary of specialty English is difficult and it is difficult to understand and translate. Some students have already given up on this subject.

4.2. Limitations of traditional textbooks

Due to the limited coverage of specialty English for civil engineering, most textbooks follow the traditional route, using one-to-one Chinese and English contrasts, and lack of guidance on students' interest. Traditional textbooks did not fully explain the specific examples encountered by the student union in international projects from the perspective of students. The selected articles and content lacked pertinence. Learning how to translate incomprehensible sentences was not very helpful to students. English is actually a communication skill, not just translation of professional terms. Therefore, it is more difficult to find a textbook that closely combines basic English and professional knowledge with the actual situation of students.

4.3. Backward teaching methods

The teaching methods are one of the factors that determine the success of teaching. At present, the teaching method of specialty English for civil engineering is still relatively single, which cannot stimulate students' enthusiasm for learning. Most teachers still use traditional teaching methods: reading by students, explaining by teachers, and translating articles. The teacher's explanation cannot mobilize the students' thinking. This kind of boring classroom teaching is difficult to achieve the ideal teaching effect. As the result, the teaching of specialty English for civil engineering has become a single situation.

4.4. Weakness of teacher faculty

At present, most teachers who teach specialty English are either proficient in majors and negligent in English, or proficient in English and negligent in majors. This leads to a dilemma in the process of specialty English teaching: if the specialty English courses are taught by English majors, the teachers have not really participated in international engineering and other construction projects, and they have not mastered the scientific problems in engineering practice. There is nothing novel that can be given to students except to repeat what the book says. If civil engineering teachers with good English are used as specialty English teachers, although they have a good grasp of the teaching content, they can hardly reach English in terms of language expression and language teaching methods. Therefore, after the course, students only mastered a few professional terms, but their specialty English listening and speaking skills have not been developed and improved.

5. REFORM OF CURRICULUM TEACHING

In order to adapt to the training requirements of civil engineering professionals under the new situation, it is imperative to carry out reforms in terms of teacher faculty construction, teaching resources, teaching mode and evaluation mechanism in view of the current problems in teaching of specialty English for civil engineering.

5.1. Improving the comprehensive quality of teachers

In order to improve the faculty and overall quality of civil engineering specialty English teachers, we can start from two aspects: On the one hand, provide English training for civil engineering teachers. The training methods can take advanced studies and special purpose English training, focusing on improving the English language ability and grammar knowledge of professional teachers, and allowing them to systematically learn English teaching methods and other knowledge. In addition, foreign experts can also be hired to provide language training for them, or to send them special foreign language colleges for training. If possible, they can also go to English-speaking countries for academic exchange visits to meet the needs of civil engineering specialty English teaching. On the other hand, for teachers of English majors, they can also participate in civil engineering specialty English teaching, and through professional knowledge training for them, to meet the needs of specialty English teaching. At the same time, it is necessary to adopt appropriate incentive measures to reward teachers who participate in the training, so that more and more professional teachers or English teachers participate in training and further education. Only by continuously enriching, improving and stabilizing the

specialty English teacher team in civil engineering can we effectively carry out the construction of teacher faculty.

5.2. Integrating teaching resources

High-quality teaching resources and teaching content are the key to determining whether teachers can teach well and students can learn well [5]. The teachers should update and enrich the existing teaching content by integrating high-quality teaching resources, and should flexibly introduce English materials such as English scientific and technological papers, typical engineering cases, latest research trends and professional-related news reports into the teaching content so as to allow students to gain more updated professional knowledge while learning specialty English. For example, in the teaching content of Tall Buildings, we can supplement the local high-rise buildings that students are familiar with to explain in English; in the teaching of Bridge, we can use the English report video of the longest cross-sea bridge in the world-the Hong Kong-Zhuhai-Macao Bridge as a teaching content. In the course of How Tunnels Are Built, we can focus on introducing the working principle of tunnel excavation by shield machines that are currently widely used at home and abroad. This can not only make up for the lack of outdated professional knowledge in textbooks, but also mobilize students' interest in learning through a variety of teaching resources.

5.3. Diversification of teaching methods

In order to achieve the teaching effect and actively arouse students' interest and enthusiasm in learning specialty English, the teachers should adopt a variety of measures to achieve the diversification of teaching content and methods. Compared with other teaching methods, multimedia technology has the advantages of vividness, intuition, and large amount of information. It can effectively stimulate students' learning enthusiasm, enable them to concentrate on learning, and improve the teaching effect of specialty English. In addition, the teachers should also guide students to discuss with actual engineering cases. For example, students can be provided with English materials of bidding contracts, construction drawings, and architectural design documents. In classroom teaching, student-centered, teacher-student interaction is achieved, while teachers cooperate with students to conduct discussion-based teaching. Finally, the teacher makes a summary and the teacher and students get the answer together.

5.4. Increasing the amount of English literature reading

Regarding the lack of reading after class, it is recommended that teachers collect some high-quality English books and literature in this field and recommend

them to read, and then check the students' reading in the next class. The students who spend time reading are rewarded with their usual grades, and the rest of the students are not forced to read, so that they have no rebellious emotions for learning, and they can form a good incentive mechanism to cleverly increase everyone's reading. After-class reading materials should be carefully selected in accordance with the current needs of engineering professional quality education, for example, selecting some English professional materials that students may encounter as a civil engineer after graduation and work in the future. Bidding documents for international projects are good reading materials, and internationally renowned project contract templates are also worth recommending. In addition, we can also consciously select some international engineering application writing cases, such as engineering power of attorney, construction site agreement, engineering letter, construction plan, etc. These English materials are generally simple in style, rigorous and concise in language, and have a certain level of professionalism. They can not only improve students' reading capacity, but also lay the foundation for the international engineering work practice activities that students may participate in in the future [6].

5.5. Optimizing the evaluation mechanism

Teaching is not only a process for students to acquire knowledge, but also a process for cultivating students' abilities and developing students' quality. In teaching, we must adhere to the output orientation, pay attention to the improvement of students' innovative ability, guide students to think in the classroom. We should design the course content and evaluation mechanism according to the needs of society. The teaching output of civil engineering specialty English is to train future civil engineering practitioners with solid professional knowledge, English use skills and international vision. This requires students to be proficient in the expression of civil engineering terminology, master certain translation skills, and exercise their English writing and oral expression skills. Therefore, in the student evaluation mechanism, the evaluation of the teaching process should be emphasized on the basis of the final exam. For example, we can score PPT reports and group discussions in practical teaching, focusing on the students' listening and speaking skills.

6. CONCLUSION

As the scope of our country's participation in international engineering affairs continues to expand, how to train interdisciplinary civil engineering talents who are both proficient in majors and proficient in communicating in English is an urgent requirement of the times for universities. This article elaborates and analyzes the situation and some existing problems of the teaching practice of civil engineering specialty English courses,

combined with our own teaching experience, and gives countermeasures and suggestions from the aspects of teacher faculty construction, teaching resources, teaching mode and evaluation mechanism, etc., which can provide reference used in the teaching of specialty English for civil engineering.

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