

Discussion on the English Teaching Method of “Building Construction” for International Students under the Background of the “Belt and Road Initiative”

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Keywords: Belt and road initiative, Building construction, International student, English teaching method, Flipped classroom

Abstract: Establishing an English-language course system for building construction is a major requirement for the training of international students majoring in civil engineering under the background of the “Belt and Road Initiative” The paper analyzes the problems existing in the teaching of international students and then proposes suggestions for the construction of an English course system of building construction from the aspects of teaching mode, teaching plan, and teaching content. By constructing a flipped classroom teaching model, adapting to the characteristics of international students, and improving the enthusiasm of learning; Given the large differences in knowledge acceptance ability and learning intention concentration among international students, the teaching plan, teaching content, and methods should be adjusted so that international students can learn more specifically and accept knowledge more easily. Through self-editing lecture notes and highlighting key points, students can have a clearer understanding of the teaching content.

1. Introduction

With the proposal of the “Belt and Road Initiative”, more and more students from countries along the route come to China to study. In this context, colleges and universities shoulder the important responsibility of promoting national exchanges and cultivating high-quality professionals. At the same time, it plays an important role in enhancing the influence of China education in the world.

As international students from countries along with the “Belt and Road Initiative” come from different countries, they have different religious beliefs, living habits, learning models, curriculum systems, and expressions. This is completely different from the background knowledge, learning habits, and thinking mode of Chinese students. If the same education method is adopted with Chinese college students, the teaching effect will inevitably be affected. Therefore, it is necessary to

improve the teaching method based on the original education mode, combined with the characteristics of international students, to ensure the teaching effect of international students.

At present, scholars in colleges and universities have carried out some research on the teaching of international students and obtained corresponding results. Zhou Guangdong [1] discussed the reform of the English course entitled design principle of concrete structures under the background of “Belt and Road Initiative”, and provided a reference for the construction of the English course of concrete structure design principle. Zhou Guangdong [2] compared and analyzed the differences between Chinese college students and undergraduate students from countries along with the “Belt and Road Initiative” based on the long-term practical experience in the teaching of international students, and discussed the reform of the English curriculum system of civil engineering. Song Fengxuan [3] summarized and analyzed the teaching problems and teaching mode of international students based on teaching experience. The teaching model of the flipped classroom is adopted to explore the teaching method to improve the teaching quality of international students. Yuan Ming et al. [4] started by changing the current situation of the lack of bilingual teachers, improving teaching methods and means, and perfecting bilingual teaching materials and supporting courses, and put forward the problems and solutions faced by bilingual teaching of steel structure basics, which provided a reference for bilingual teaching of other civil engineering courses. Yan Lei et al. [5] introduced the practical work of international students in the School of Civil Engineering, Central South University, and provided references for the development of education in China.

Building construction is one of the important courses of civil engineering. It plays a connecting role in undergraduate education, which not only affects the improvement of basic professional knowledge of undergraduate students but also affects the level of the technical level of undergraduate students in future work. Therefore, this course plays an important role for undergraduates majoring in civil engineering.

2. Problems in the Teaching of International Students

International students and Chinese students are quite different in terms of cultural background and level of cultural courses. It is necessary to establish a curriculum system suitable for international students. Before establishing curriculum system, it is necessary to deeply analyze the differences between international students and Chinese students and find out the problems in the teaching process, so as to formulate teaching methods suitable for international students.

2.1 There Are Differences in Cultural Background

Although Chinese students come from different places, they have the same history and culture. Chinese students have conservative and cautious personality traits, are accustomed to passively accepting learning methods, and less questioning what teachers say, do not like to communicate with teachers and do not take the initiative to express opinions. However, international students from countries along the “Belt and Road Initiative” are more influenced by Western culture. International students treat teachers as teachers and friends and communicate with them smoothly. They like to put forward their objections and opinions to communicate with teachers, and even interrupt the teacher's lecture and ask questions [6]. Figure 1 shows a comparison of the rate of actively answering questions (that is, the proportion of students actively answering questions) between Chinese and international students. It can be seen from Figure 1 that the rate of international students actively answering questions reached 78.5%, which is much higher than the 43.2% of Chinese students. It can be seen that international students prefer to put forward their own opinions and interact with teachers.

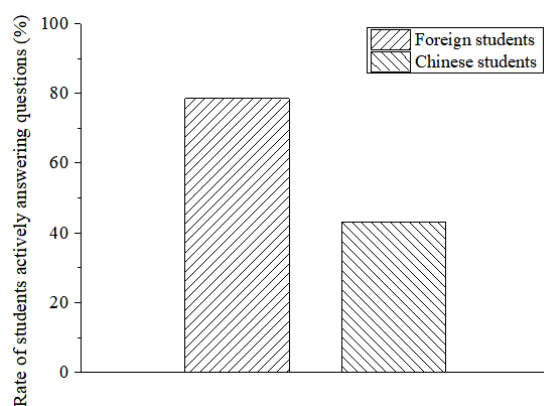


Fig.1 Rate of Students Actively Answering Questions (%)

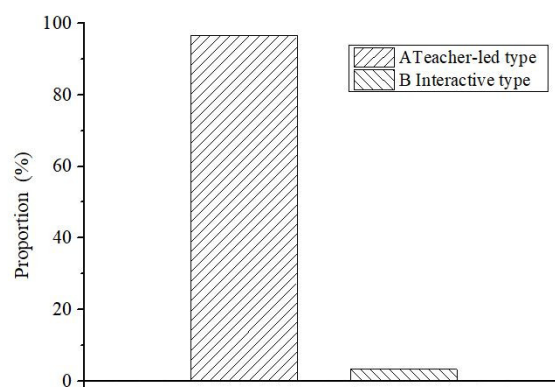


Fig.2 Survey of Teaching Type (%)

2.2 Poor Level of Cultural Courses

Chinese students are through the system of junior high school and high school learning, and through the selection of college entrance examinations to enter colleges and universities, therefore, students have a high level of cultural courses. However, the economic development level of many countries along with the “Belt and Road Initiative” is quite different. Some backward countries have a serious shortage of investment in education, shortage of teachers and hardware facilities, and the education level is quite different from China. Most colleges and universities adopt the application admission system in the enrollment of international students. In the process of examination and approval, colleges and universities often set a low admission threshold, so that a large number of international students with very weak basic theoretical knowledge are enrolled. The basic knowledge level of international students in the same grade is far lower than that of Chinese students, which puts forward new challenges to teachers' teaching work.

2.3 Poor Level of English

At present, the number of countries where the official language of international students in China is English is relatively small, and the English level of most international students is poor. Even some students have difficulty in daily communication in English. Once it involves more professional knowledge, it will be very difficult for teachers to communicate with them. Their English has a heavy local accent, and sometimes the questions they ask are difficult for teachers to understand, which makes it difficult for them to master classroom knowledge in many cases. In

addition, building construction involves a wide range of knowledge points and professional vocabulary, which is even more difficult for many students, making the teaching effect unsatisfactory.

2.4 Lack of English Textbooks

Textbooks are the basis of students' knowledge learning and teachers' teaching, but it is difficult to find an English textbook for building construction suitable for teachers. Due to the difficulty of compiling textbooks and the lack of audience, many domestic publishers are unwilling to publish them. However, foreign textbooks are quite different from Chinese textbooks, the applicability is poor, and the price is high. Therefore, international students have no textbooks. They mainly listen to the teacher's explanation and take notes, which brings great inconvenience to their learning, and they cannot study the knowledge points of the course systematically and deeply.

In addition, to make the teaching process go smoothly and students can better master the knowledge points in the course, teachers need to spend a lot of time making multimedia courseware and writing English lecture notes. This greatly squeezes the preparation time of teachers and brings great pressure to teachers.

3. Teaching Method Discussion

The course of “Building Construction” has the characteristics of more content, strong comprehensive knowledge and less class hours. In view of the differences between international students from countries along the “Belt and Road Initiative” and Chinese students, it is necessary to significantly adjust teaching content and teaching methods.

3.1 Constructing Flipped Classroom Teaching Mode

Different from the traditional teaching model, flipped classroom emphasizes the self-learning consciousness of students. It is in line with the characteristics of international students who are self-centered and like a free and relaxed learning atmosphere. The key to the realization of flipped classroom teaching is good teacher-student interaction. The teacher-student interaction is mainly completed in the classroom, and after-class and the Internet are a useful supplement to the teacher-student interaction.

In the process of interaction, teachers can design different teaching projects according to the learning ability and learning effect of students, and gradually let more students participate in the interaction. It can be guided by teachers and participated by students, or students can play the role of teachers. Heuristic and experiential teaching methods can make the teacher-student relationship more harmonious, which is more conducive to stimulating students' enthusiasm for learning and cultivating students' self-learning ability. In addition, the “flipped classroom” assessment is also added to the assessment method, and its score accounts for 10% of the total score, which greatly improves students' enthusiasm for this method.

For example, after studying civil architectural design, let students introduce the architecture of their own countries based on what they have learned, and then let everyone have a discussion. Through classroom practice, it is found that this method can increase students' interest and make the otherwise boring classroom full of vitality. In this classroom atmosphere, more students participate in it, to better acquire knowledge. Taking two different classes as an example (A is the teacher-teaching type, and B is the interactive type), the international students were surveyed by way of voting. The results are shown in Figure 2. It can be seen from Figure 2 that almost all international students prefer the interactive teaching method.

3.2 Adjust the Teaching Plan, Teaching Content, and Teaching Methods

The problem of slow teaching progress caused by the poor level of cultural courses and poor English level of international students can be solved by adjusting the teaching plan and teaching content. Given the large differences in the knowledge acceptance capabilities of international students and the difficulty of teaching in English, teaching content is adjusted. For example, most international students mainly want to understand the knowledge of civil architectural design, so the original teaching of industrial architectural design is cancelled and converted to self-study. This not only solves the problems of slow teaching progress and insufficient class time but also exercises their self-study ability.

In addition, based on the “flipped classroom teaching mode”, the method of introducing examples is used to enhance the students' understanding and mastery of knowledge. For example, in the introduction to architectural construction, each structural part (foundation, wall, column, floor, stairs, roof, doors and windows, etc.) can be displayed in the form of animation from bottom to top. Let students better understand the structure of the building. The actual photos of each structural component can be shown in the PPT so that students can better combine theoretical knowledge with practice.

3.3 Compile Applicable English Textbooks

Due to the lack of English textbooks of “Building Construction”, the author mainly uses self-compiled lecture notes and selects “Building Construction” written by Li Biyu [7] and “Building Construction” written by Cui Yanqiu [8] as teaching reference books. Combined with the teaching characteristics of the Building Construction course of China, the characteristics of the Chinese textbook are retained to the greatest extent.

According to the content of the syllabus, the author selectively selects relevant knowledge chapters and supplements the engineering case analysis to form the lecture notes. At the same time, the lecture notes also list the basic concepts, key points, and difficulties of the teaching content, so that students can clearly understand and master the teaching content.

4. Conclusion

It is difficult for teachers to ensure the quality of international students by completely copying the teaching mode of Building Construction for Chinese college students. According to the teaching practice, combined with the characteristics of international students in learning, formulating reasonable and effective teaching content, teaching methods, and assessment methods, can improve students' enthusiasm for learning, improve the knowledge level of international students. The teaching of Building Construction is complex, and there are still many problems to be further explored. This requires teachers to constantly sum up the experience in the future teaching process, analyze the feedback of international students, and put forward more teaching methods suitable for international students, to improve the teaching quality and ensure that international students can learn useful knowledge.

Acknowledgments

The University-Industry Collaborative Education Program (202102418010); the University-Industry Collaborative Education Program (202102418011).

References

- [1] Zhou guangdong. Discussion on the reform of English course entitled Design Principle of Concrete Structures under the background of “the Belt and Road Initiative”[J]. *Modern Vocational Education*, 2019, (7):106-107.
- [2] Zhou guangdong. Analysis of the difference between Chinese and foreign undergraduates majoring in civil engineering under the background of “the Belt and Road Initiative”[J]. *Modern Vocational Education*,2019,(4):22-23.
- [3] Song Fengxuan, Huang Haidong, Li Yichun, et al. Application of flipped classroom on teaching of Building Materials for international students[J]. *Journal of Beibu Gulf University*,2019, 191(11):44-49.
- [4] Yuan Ming, Luo Yuan, Liu Xiaoyan. Bilingual teaching of the principle theory of steel structure course[J]. *Journal of Architectural Education in Institutions of Higher Learning*, 2015, 24(6):83-85.
- [5] Yan Lei, Shi Mingjie, He Xuhui, et al. Education and Practice of Foreign Students in China[J]. *Education and Teaching Forum*, 2020(33): 88-90.
- [6] Zou Yang, Dai Yu. Teaching reform and practice of Computer Basic Experiment for international students[J]. *Software Guide*, 2017, 16(11):60-62.
- [7] Li Biyu, Wang Xuesong. *Building Construction [M]*.Wuhan : Wuhan University of Technology Press, 2014.
- [8] Cui Yanqiu, Lv Shujian. *Building Construction [M]*. Beijing: China Electric Power Press, 2014.