

# Research on Teaching Management Problems and Countermeasures for International Students of Civil Engineering in China

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**Abstract:** *As the number of international students in China continues to increase, higher education has been confronted with a multitude of unprecedented opportunities and challenges. This paper analyses the problems existing in the teaching management mode of international students majoring in civil engineering and proposes improvements to the teaching management mode of international students from three aspects: optimising the quality of international students, improving the management system of international students, and optimising The teaching quality assurance system is applied to the teaching process of international students majoring in civil engineering and other disciplines at Chongqing Jiaotong University, in order to provide a reference for the reform of innovation and entrepreneurship education in colleges and universities.*

**Key words:** *International students in China; Civil engineering; International Student Management; Teaching for international students*

## Introduction

In recent years, with the continuous advancement of the "Belt and Road" initiative and the ongoing development of the internationalization of higher education in China, the scale of engineering international students coming to China has gradually expanded <sup>[1]</sup>. These international students cover various disciplines, including engineering, medicine, literature, and economics. As a crucial branch of engineering, civil engineering plays a key role globally. With the acceleration of globalization, the civil engineering industry in various countries faces increasingly complex and diverse challenges, making it particularly important to cultivate civil engineering professionals with international perspectives and practical skills <sup>[2]</sup>. Consequently, civil engineering is a common choice among international students pursuing advanced studies in China's prestigious engineering universities.

As the scale of international students in China continues to expand, establishing systematic and professional educational methods to ensure the quality and effectiveness of education has become a topic of concern and discussion among educators. However, the international training programs for these students are still in their early stages and require advanced educational theories and methods tailored to China's context to fill the research gap. On the other hand, the education of international students in civil engineering needs to move away from traditional teaching approaches, adopting new engineering education concepts and innovative talent cultivation models to improve teaching quality. This paper explores the development of training programs and teaching methods for international students in civil engineering, aiming to develop new teaching models. This research is of significant theoretical and practical value for the development of higher education for international civil engineering students in China.

## 1 Current Situation of Civil Engineering Education for International Students in China

The undergraduate education system for international students in civil engineering in China typically spans four years. Upon completing all requirements of the curriculum, students who meet the graduation standards are awarded a bachelor's degree in engineering. The educational system and curriculum for international civil engineering students in China are relatively complete, covering undergraduate to postgraduate levels. The curriculum generally includes fundamental theory courses, core professional courses, and practical courses. While practical teaching is emphasized in some

universities, there remain issues in certain regions and institutions, such as insufficient resources for practical teaching and inadequate integration with actual engineering projects. Some universities have made significant progress in combining scientific research with engineering practice, establishing laboratories and engineering training bases to provide more practical opportunities for international students. However, the strong specialization of civil engineering, comprehensive course offerings, and the necessity of practical learning present challenges in teaching and managing international civil engineering students in China.

## **2 Problems in the Teaching and Management of International Students**

With the deepening internationalization process in China, universities have increasingly focused on educational internationalization, investing more resources and efforts, leading to a continuous increase in the number of international students. However, several problems persist in the teaching of these students.

### ***2.1 Language Barriers and Cultural Differences***

There are significant language and cultural differences between international students and Chinese students and teachers. International students from various countries and cultural backgrounds may know little about China's history, traditions, and social customs, leading to potential misunderstandings in interactions with Chinese students and teachers. Moreover, language barriers and communication difficulties make it harder to resolve conflicts. Additionally, international students often come from diverse linguistic and cultural backgrounds, potentially causing conflicts among themselves. These students, although using English as a common language, may face communication challenges due to different accents, speech speeds, and expressions. Moreover, competition or cooperation, such as in scholarship applications or academic performance, can lead to conflicts. Social adaptation issues and feelings of isolation or exclusion can also affect their psychological well-being, impacting their learning and living experiences in universities.

### ***2.2 Varied Levels of Professional Knowledge among International Students***

Many Chinese universities use the number of international students as an indicator of their level of internationalization, often lowering admission thresholds and relaxing policies to recruit more students. However, this approach, which focuses on quantity rather than quality, has raised widespread concerns. The unequal development of foundational education in different countries further complicates the issue. For instance, at Chongqing Jiaotong University, students from South Asia generally have a good foundation and rarely question or express personal opinions to teachers. In contrast, students from African countries show more significant differences, with some having a solid foundation and most lagging behind their Chinese and South Asian counterparts, especially in mathematics, which significantly impacts their studies in engineering disciplines.

### ***2.3 Teachers' Lack of Experience in Teaching International Students***

Many teachers are not well-acquainted with the specific needs of international students. In teaching professional knowledge, teachers need to understand the cultural backgrounds of students' home countries. However, some teachers lack international experience and are unfamiliar with the human resource needs of students' home countries, leading to a mismatch between the training programs and the employment market in those countries. Additionally, while experienced older teachers may have limited English proficiency, younger teachers, although proficient in English, often lack teaching experience. Some universities hire part-time teachers to teach international students, but these teachers often lack experience in teaching international students and use a rote learning approach, not considering the differences between international and Chinese students, resulting in inconsistent teaching quality<sup>[3]</sup>. Most international students choose to be taught in Chinese, but their proficiency in listening, speaking, reading, and writing in Chinese is generally low, making effective communication with teachers difficult and unable to meet their learning and living requirements.

### ***2.4 Outdated Teaching Materials for International Students***

Teaching materials are crucial tools for knowledge transmission, directly affecting the logical flow

of classroom instruction and the depth of students' understanding. Currently, most universities offer both Chinese and English textbooks. However, Chinese textbooks often contain Chinese-specific expressions and traditional teaching methods that fail to stimulate the interest and motivation of international students. Purely English textbooks, on the other hand, are often directly imported from Western countries and fail to reflect Chinese characteristics, limiting the scope of teaching when used by teachers [4].

### ***2.5 Outdated Teaching Models for International Students***

The teaching models for international students are still heavily influenced by traditional Chinese education methods, lacking designs tailored to the habits of students from different countries. Modern and innovative teaching methods are underutilized, and there are few teachers familiar with foreign teaching designs who can effectively use bilingual teaching. Practical teaching is crucial in civil engineering. Although practical teaching for civil engineering has been widely implemented, issues such as "going through the motions," similar teaching designs, and low participation in practical teaching still exist, resulting in poor teaching outcomes and low student engagement in practical teaching.

### ***2.6 Relaxed Teaching Assessments for International Students***

To ensure that international students can graduate smoothly, some universities use closed small-class teaching, creating special classes with different teaching and assessment standards from Chinese students to reduce course difficulty and passing thresholds. This approach relaxes academic requirements for international students. Additionally, disciplinary assessments for international students are also relatively relaxed. Some students display poor learning attitudes, frequently arriving late or missing classes, and failing to meet the school's academic standards. Due to the sensitivity and special nature of international student education, most universities do not take disciplinary measures against such students, instead ignoring their misconduct and lowering examination difficulty to ensure they graduate smoothly, thereby fostering undesirable attitudes among some students and negatively impacting the quality of international student education.

## **3 Strategies for Teaching and Managing International Students in Civil Engineering**

### ***3.1 Optimizing the Quality of International Student Recruitment***

#### ***3.1.1 Expanding Recruitment Channels***

Institutions should actively expand their recruitment channels for international students and establish a multi-level, multi-channel recruitment network, gradually reducing their reliance on international study agencies. First, fully utilize the internet and social media platforms by creating dedicated international student recruitment websites, social media accounts, and online advertisements to showcase the unique features and advantages of Chinese universities to potential students worldwide. Secondly, set up dedicated international student recruitment service teams to provide personalized application consultations and services, addressing any questions and concerns that international students may have during the application process. Additionally, leverage the alumni network of graduated international students to attract more students who are already familiar with the institution and assured of its educational quality [5].

#### ***3.1.2 Rational Selection of Source Countries***

Institutions should strategically select source regions and strengthen communication with government foreign affairs offices, commerce bureaus, industry associations, and leading enterprises to conduct research on the conditions of primary source countries. Focus on selecting friendly countries with Chinese enterprises' presence and a certain level of basic education as the main target source regions.

#### ***3.1.3 Establishing Unified Admission Standards***

Institutions should establish unified admission standards for international students, setting specific criteria in terms of understanding and friendliness towards China, language proficiency, academic

background, and cross-cultural abilities. This ensures that international students possess the necessary language skills and foundational knowledge required for normal academic activities. Additionally, institutions can conduct interviews to assess international students' language proficiency, academic interests, and personal qualities to comprehensively evaluate their eligibility for admission.

### ***3.2 Improving International Student Management Systems***

#### ***3.2.1 Implementing a Mentorship System***

Drawing from the mentorship system used for domestic master's students, institutions can apply this model to undergraduate international students. Upon entering the school, each international student should be assigned a designated mentor as the primary point of contact. This arrangement not only facilitates regular interaction between international students and their mentors but also helps improve their language skills and compensates for non-native English speakers' language deficiencies through increased practical teaching sessions.

#### ***3.2.2 Establishing Group Management Models for International Students***

Adopting the group management model used for Chinese students, institutions can establish student organizations such as international student unions, youth volunteer associations, and student clubs. These groups can organize activities that help international students integrate into campus life and enhance their sense of community. Promoting interaction and cooperation between Chinese student organizations and international student organizations can improve Chinese students' international communication skills and broaden their horizons. Simultaneously, international students can experience and adapt to Chinese educational methods and better integrate into academic and social life.

#### ***3.2.3 Organizing Cultural Exchange Activities***

Institutions can offer public and elective courses related to Chinese culture, such as language, calligraphy, and painting, and introduce cultural courses from international students' home countries. Regularly organized activities like historical and cultural site visits, museum tours, and traditional festival celebrations allow international students to experience Chinese cultural traditions firsthand. Additionally, hosting cultural exchange weeks or specific festival celebrations can showcase and celebrate various cultural characteristics from different countries and regions through exhibitions, performances, and lectures, fostering mutual understanding and respect between international and domestic students.

### ***3.3 Optimizing the Quality Assurance System for Teaching***

#### ***3.3.1 Strengthening Faculty Capabilities***

Firstly, institutions can encourage collaboration between foreign language teachers and subject teachers by pairing them to utilize their respective strengths to enhance teaching quality. This arrangement not only complements the foreign language proficiency of some teachers with the subject expertise of others but also improves overall teaching outcomes. Secondly, improving teachers' teaching abilities is essential. This can be achieved by providing language training and pedagogical workshops, especially for teachers with limited English proficiency. Through systematic training, these teachers can enhance their English skills and learn more effective teaching methods, thus better guiding international students in the classroom. Offering more overseas training opportunities for key faculty members involved in teaching international students allows them to learn the latest teaching techniques and international education concepts, thereby enhancing their teaching abilities and professional competence. Encouraging international student teachers to participate in relevant academic conferences and inviting foreign experts for lectures and exchanges can help faculty stay updated with the latest trends in international student education and provide new insights and methods for teaching practice, enhancing their academic competitiveness in the field. Finally, expanding the teaching staff is crucial. Institutions can consider recruiting outstanding teachers with overseas educational backgrounds and extensive experience to build an international teaching team. This initiative not only improves the quality of English-taught courses but also provides international students with a richer and more diverse educational experience. Additionally, inviting experienced industry professionals to collaborate with faculty in teaching courses to international students can combine theoretical teaching with practical application, helping international students develop skills to solve real-world engineering

problems [6].

### **3.3.2 Improving Curriculum Design**

In curriculum design, it is essential to include foundational courses that enhance basic skills and professional foundational courses that prepare students for advanced core courses. Secondly, optimizing teaching methods is necessary. Institutions should select course content that aligns with current production and living realities, reflecting contemporary relevance and implementing "multimodal" teaching models for international students. To address the lack of internationalization in education and the low proportion of practical teaching, institutions should adjust training programs to increase the proportion of practical teaching. In civil engineering, core courses like concrete structure design, material mechanics, and structural mechanics are crucial for cultivating students' professional qualities and abilities. However, international students often have weaker foundational knowledge and may face difficulties with theoretical instruction. By increasing the number of mechanics experiments and engineering practice courses, international students can directly experience and apply their knowledge, enhancing their interest in learning and practical skills, and deepening their understanding of theoretical concepts. For courses that cannot be completed through practical means, institutions can utilize various channels and teaching methods, such as diagrams, videos, audio, and 3D simulations [8]. This diverse learning environment allows international students to understand and apply engineering knowledge through visual, auditory, and kinesthetic channels. This approach helps cultivate students' multimodal literacy and communication skills, meeting the goal of cultivating "applied" talents in engineering schools.[7]

### **3.3.3 Establishing Reasonable Assessment Methods**

In terms of assessment methods, considering the differences between Chinese and international students, institutions should tailor course arrangements and teaching plans to their individual characteristics. For instance, institutions should conduct proficiency exams for international students and, based on the results, classify them into different levels, forming tiered teaching classes and implementing differentiated instruction based on their foundational knowledge. For students with varying learning needs, individualized teaching support and guidance should be provided. A comprehensive assessment system combining process supervision and exam results should be established, documenting daily learning through classroom reports and periodic quizzes, and assessing semester performance through final exams, reports, or papers. This combined evaluation method can accurately reflect international students' learning progress and outcomes.

## **Conclusion**

In the context of accelerating institutional innovation in higher education and the increasing number of international students in China, the education of international students requires a series of strategic and comprehensive adjustments. The research findings of this paper will be applied to the teaching of mechanics and other subjects for civil engineering international students at our university. This will cater to the talent needs of civil engineering and related fields, emphasizing the integration of theoretical application and engineering practice capabilities. It will further highlight the close integration of industry, academia, and research, establishing a high-level, open teaching team with international vision and rich engineering experience. Additionally, it will provide a reference model and experience for the education of international students in other disciplines or institutions, benefiting the further deepening of international exchange and educational reform, and improving the quality of international student training.

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