

Reform and Exploration of "Computer Network" Course for International Students from "One Belt and One Road" Country

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Abstract. Based on the analysis of the characteristics of the students in the "One Belt and One Way" state, this paper gives a teaching reform plan for the "Computer Network" course. The specific measures of the reform include the use of multiple media for teaching and the adjustment of class time. After two years of teaching process comparison, it is found that these measures can significantly improve the learning interest and learning effect of foreign students.

Introduction

"One Belt and One Road" refers to the "Silk Road Economic Belt" and the "21st Century Maritime Silk Road". The strategy of "One Belt and One Road" is a major strategic decision made by the CPC Central Committee according to the profound changes in the domestic and international situations. It has great and far-reaching significance for building a more open new economic structure and promoting the prosperity and development of the world economy.

Along with the acceleration of the process of economic globalization, the "One Belt and One Road" initiative led by our country has been actively responded and supported by all the countries along the route. In the context of education internationalization, more and more students from countries along the line choose China as their destination. Higher education in China for overseas students is an important pillar of the country's overall strategy. It is a new opportunity to enhance the endogenous traction of education and improve the quality of education. It should become a new starting point for universities to improve the level of internationalization of education.

The strategy of "One Belt and One Road" brings new challenges and opportunities to the internationalization of higher education. Higher education should shoulder the historical mission and provide personnel support and intellectual support for the advancement of the "One Belt and One Road" strategy. The education of international students in China is a booster for economic cooperation and cultural exchanges in the "One Belt and One Road" strategy. It can not only train a large number of professionals in the field of composite talents and key areas, but also promote cultural exchanges and public opinion among the countries along the route.

The countries along the route of "One Belt and One Road" are becoming the main source countries for international students studying in China. The increasing number of foreign students receiving academic education in China objectively requires us to reform the traditional classroom teaching of foreign students, and have to actively explore how to train professionals who are suited to the national "One Belt and One Road" strategy. For this reason, we need to change the concept of talent training for overseas students first. The direction of training for overseas students to promote the development of Chinese culture and develop friendly relations with foreign countries should be transformed into applied and compound talents who serve the strategic needs of "One Belt and One Road". It is a logical premise for us to correctly carry out the classroom teaching reform of overseas students in China to fully realize the transformation of talent training orientation and goal.

Although our universities have taken many effective measures and achieved remarkable results in the education of overseas students along the "one belt and one road" area in the past few years, we still cannot ignore some new problems.

We have analyzed the situation of the international students in our college and found out the existing problems. On this basis, the countermeasures were given. It has been proved that these measures can improve the learning motivation and effect of these students.

Macro Obstacle

Compared with the teaching in Colleges and universities, the education for academic qualifications of foreign students puts forward higher requirements for teachers. To teach professional courses for international students, teachers should not only be proficient in the major, be able to teach professional problems in a simple way, but also have a good foreign language level, and be good at cross-cultural communication.

In addition, teaching teams should be formed around specialties and disciplines. Therefore, the construction of teachers is the basic condition for the reform of classroom teaching and the improvement of the quality of personnel training. At present, the reality is that there are few teachers who can use foreign language to teach professional courses. Therefore, the problem of teachers has become a short board for the development of education for foreign students.

From the perspective of learning habits, Chinese and foreign students show different characteristics: Chinese students attach great importance to the understanding and memory of abstract knowledge, while foreign students prefer to strengthen the understanding of image knowledge through specific examples; Chinese students attach importance to empirical knowledge, only on the basis of having necessary knowledge or observing other people's experience can practice, while foreign students emphasize the practical use of knowledge Chinese students tend to seek advice from teachers and carry out learning activities on the basis of interpersonal communication, while foreign students prefer to carry out personal research-based learning and tend to complete learning tasks independently.

Examples of International Students Majoring in Computer Science and Technology in 2018

There are 18 international students majoring in computer science and technology in 2018. These 18 people, including 14 girls and 4 boys. They come from five countries, which are Pakistan, Bangladesh, Guinea-Bissau, Liberia and Zambia.

The sex distribution and country distribution of these international students are shown in Figures 1 and 2.

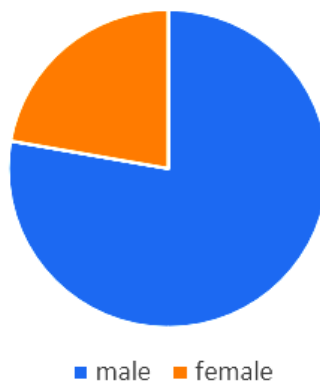


Figure 1. Sex Distribution.

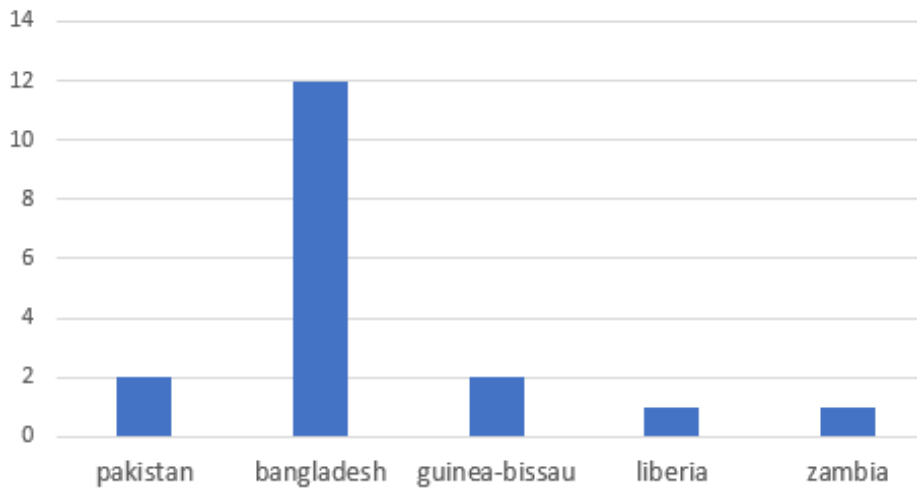


Figure 2. Country Distribution.

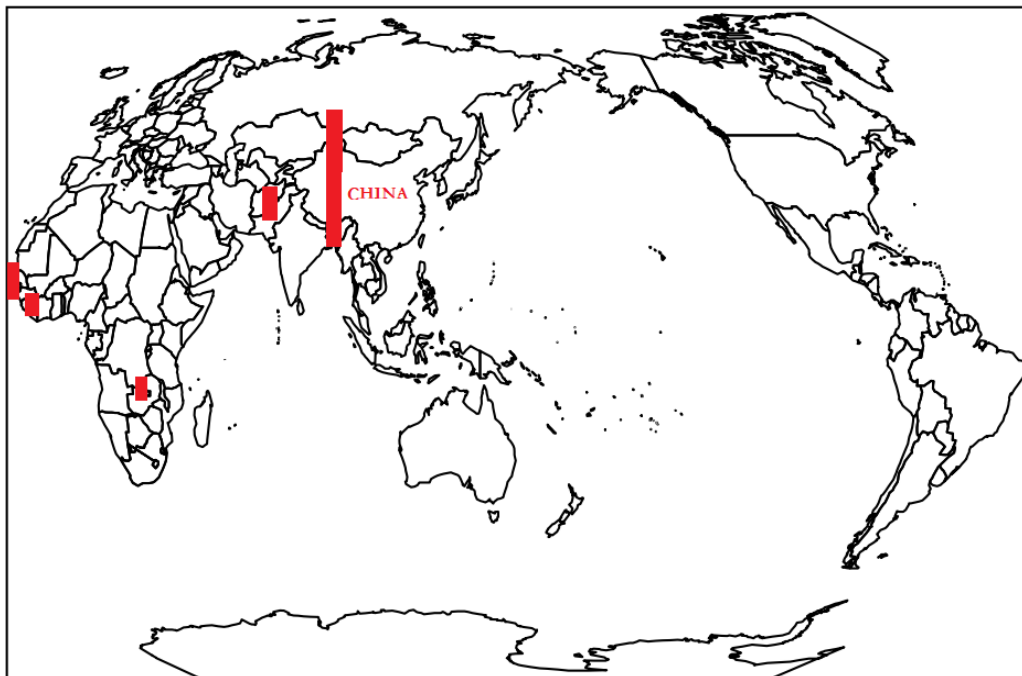


Figure 3. Distribution of Students on the Map.

Study and Life Characteristics of International Students

Influenced by different cultural backgrounds and religious beliefs, there are great differences between Chinese students and foreign students in thinking mode, speech and behavior. From the country distribution, we can see that most of these students come from Southeast Asia and African countries. Their knowledge of mathematics and physics is relatively poor. In living habits, most of them are late to bed and late to rise. In addition, overseas students always like to get together for some parties and entertainment activities. The specific performance is that many students are always late for the first class in the morning (starting at 8:00). Most foreign students have a high degree of interest in Chinese courses, far more than in professional courses. Some foreign students fall in love with Chinese students.

The Characteristics of Teaching Materials of “Computer Network” Course

“Computer network” is a professional basic course for undergraduate students majoring in

computer science and technology. The course has 54 class hours in total, including 46 theoretical class hours and 8 experimental class hours. The main content of this course is computer network architecture and protocol stack. The feature of the course content is that there is a lot of abstract knowledge. The course focuses on computer theory and communication theory. The table 1 is the list of “Computer Network” course chapters and hours list.

Table 1. List of “Computer Network” Course Chapters and Hours List.

Chapter	Theoretical hours	Experimental hours	Key contents
1 Instruction	4	0	Network history, topology, type, architecture, and performance metrics
2 Physical Layer	4	2	Coding, transmission media, production of twisted pair
3 Data Link Layer	6	2	CSMA/CD, MAC Address, Hub, Switch
4 Network Layer	8	2	IP, IP Address, Subnet Mask, Router Algorithm, ARP
5 Transport Layer	6	2	Protocol Port, TCP, UDP, Three-way Handshake, Four-way Handshake
6 Application Layer	6	2	DNS, E-mail, HTTP, HTML, FTP, TELNET, DHCP
7 Network Security	6	0	Cryptosystem, Firewall, Intrusion detection, Digital signature
8 Wireless and Mobile Networks	2	0	WIFI, Mobile Networks
9 Review	2	0	Review, Answer Questions

Classroom Reform Measures

In general, the international students prefer to accept the content of image thinking. In order to adapt to their characteristics, we have adopted various forms of media for lectures. These media forms include PPT, animation, image, video, etc. The proportion of various media is shown in Figure 4.

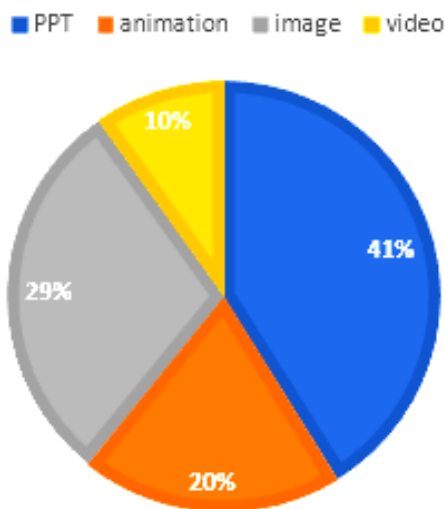


Figure 4. Proportion of Various Media.

Schedule the class to start at 9:45. This can greatly reduce the incidence of late phenomenon. As can be seen from Figure 5, the number of students who are late for class starting at 9:45 is greatly reduced.

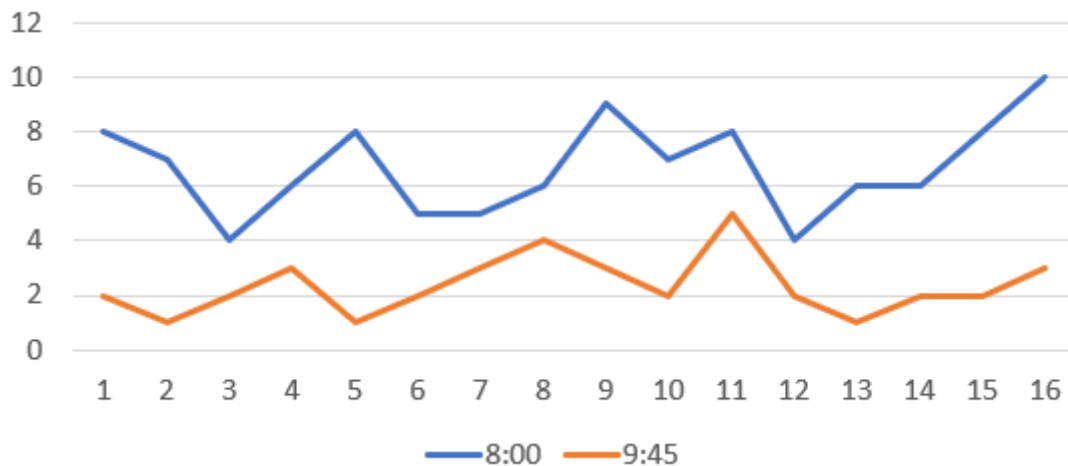


Figure 5. Number of Students Late for Each Class in a Semester.

Conclusion

In order to effectively promote the "one belt and one way" national top-level Cooperation Initiative, our college is actively participating in the training of talents along the "one belt and one road" line. Combining with its own school running characteristics and resource advantages, we vigorously develop the training of undergraduate students in computer science and technology. Improve the level of international education. We choose teachers who not only know professional theoretical knowledge, but also can use English to communicate proficiently as courses for international students. These teachers boldly carry out the teaching reform of computer network course. They used a variety of teaching media to explain knowledge points, and achieved good results. The specific performance is that the passing rate of the examination increases year by year.

Acknowledgement

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