

Research on Teaching Reform of 《 Component Software development》 course based on Chinese-foreign Cooperative Higher Education

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Abstract—To give full play to the advantages of 20-year international cooperation with the University of Applied Sciences in Germany, we learn from their practice teaching evaluation system and implementation experience, so that we explore the teaching reform of <component software development> course and has obtain certain achievement.

Keywords—teaching reform; higer education; component software development

I. INTRODUCTION

"Network Programming", the predecessor of Component Based Software Development, was a professional course opened in the first half of 2006. It was the period of rapid development of the Internet. Both enterprises and government departments are committed to achieving Network office, in order to realize the informationization of enterprises and government departments, the society needs a large number of network construction and website design and development talents. Because of this, we adapt to the needs of society and technology development, and this practice is very strong. The course, which made our school walk in front of the brothers and universities in the same class..

In 2007-2008, because of the need to run a partnership with the University of Southern Queensland in Australia, we changed this course to Component Based Software Development, which is designed as an all-English-led course in China and Australia. Cooperative school project---One of the 12 degree courses of the University of South Queensland in the Australian-Chinese class. This course is a network programming course, including object-oriented technology, .NET technology, client/server segment programming technology, etc. It is hoped that students can master the network development capabilities based on different operating platforms and different programming languages. At that time, it was the period of rapid development of the Internet. Both enterprises

and government departments are committed to network office to realize the informationization of enterprises and government departments. The society needs a large number of network construction and website design and development talents. This frontier and practical course fully reflects the characteristics of international cooperation in running schools.

Because this course adopts all English textbooks, English teaching, Assignment and final exams are also in English, it has a high degree of cutting-edge and practicality, and requires high English proficiency and hands-on ability, especially in the practical teaching of Assignment to students. High expectations. Therefore, the course teaching and research group and the relevant teachers of the University of Southern Queensland in Australia worked closely together to carry out a series of reforms and explorations on the course, such as reforming the curriculum for professional requirements, allowing students to pre-professional courses before the course. "C# Programming" enables students to develop professional teaching based on their proficiency in computer language application, rationalize the curriculum relationship in international cooperative education, and add curriculum design links to strengthen students' project development capabilities. The purpose of cultivating applied talents.

For three consecutive years, we have actively carried out research on network-oriented, multimedia-based CAI and Internet-based teaching resources, and applied the research results to daily teaching practice, using modern teaching methods to continuously increase the proportion of computer-assisted teaching. In addition, in the heuristic teaching, teaching students in accordance with their aptitude, interactive teaching, mining students' interest in learning, the way of thinking in software development and the method of proofing problems, they have actively explored and tried, and achieved preliminary results. At the same time, it adopts advanced foreign teaching mode and process evaluation system to implement teaching. It is considered as a favorite course for students in the

evaluation of students' evaluation of teaching, and has achieved the desired effect of teaching.

II. TEACHING RESEARCH AND REFORM

This course learns the advanced teaching mode of foreign universities in the teaching process, and uses a lot of research-based teaching, case teaching and other methods, with multimedia teaching as a supplement, and has achieved good teaching results.

Seminar-based teaching: Using the teacher's introductory lectures, the students carry out small-class discussion around the teachers' pre-arranged topics, and improve students' self-learning ability and teamwork awareness. Students are required to participate in class discussions in English and complete assignments. The questions in the test paper are in English. Through bilingual teaching, students develop the level and ability to acquire and exchange professional knowledge in English. In combination with the content of the course, students are organized to conduct research in the form of small groups, develop demand analysis for the e-commerce system, and report the research results in the classroom. The teaching task of the course is to teach students the development techniques of network programs, and through a large number of case studies, to develop students' ability to develop projects, while using multimedia teaching, a variety of teaching methods to inspire students' international vision and analytical research capabilities.

Case teaching: Based on the teaching materials with advanced theory and high academic standards, the teaching of the course pays great attention to case teaching, emphasizes the practical application of knowledge, inspires students to think positively, form their own viewpoints and ideas, and achieve good results. Teaching effect. Through the operation of an e-commerce system, the assignment is divided into several small assignments, including demand analysis, system design, etc., around the main line of the course, the knowledge points are gradually infiltrated, and the students step through the big work. Completion, the complete combination of theory and practice, is very logical and interesting.

Multimedia-assisted instruction: The course uses computer-assisted multimedia teaching methods. At the same time, the University of Southern Queensland provides the Studydesk online teaching platform for its professional courses. Through this platform, students can exchange information, view course information, submit homework, communicate with the lecturers online, realize high-quality teaching resources sharing, and provide students with independent learning and personalized learning. With a broad platform, the depth and breadth of students' knowledge has been significantly expanded.

Attach importance to the combination of theory and practice, and cultivate students' practical application ability: 1) Experimental teaching: Define the requirements of practice links in the syllabus, and at the same time formulate a systematic experimental outline. At present, the experimental opening rate reaches 100%. 2) Scientific research practice: Encourage students to take the initiative to participate in the teacher's research projects, and actively organize project students to participate in practical discipline competitions, such as programming competitions, electronic design competitions, etc., to develop students' ability to solve practical problems, cooperative communication skills, and deepen Students' understanding of the course has increased professional interest and motivation.

Advanced course teaching and evaluation system: Through the China-Australia cooperation school project, the advanced course teaching and evaluation system of foreign universities was introduced. Introduce a rigorous process evaluation system in the teaching process, from test-oriented education to capacity training. The evaluation of this course is divided into two parts, usually and at the end of the period, and they are closely combined and complement each other. The usual evaluation consists of 2-3 large jobs, accounting for 40% of the final evaluation. Each major operation is completed in the form of survey reports, requirements design documents, etc. Finally, students are required to design and implement a complete online e-commerce system. Because of the high demands of large assignments and the severe punishment for plagiarism, students are not allowed to slack off from the beginning. Secondly, the final assessment is not entirely determined by the total score of the exam, but each part must meet the minimum requirements. A rigorous and clear process evaluation system encourages students to abandon their learning skills

III. CHARACTERISTICS AND TEACHING ACHIEVEMENTS

We have achieved the following three results: (1) Constructing a multi-level and modular curriculum assessment system based on advanced experimental teaching concepts and three-level capacity training objectives, forming the core content of practical teaching reform. (2) Constructing an open experimental environment and a modern management system, introducing project practice teaching assessment (3) Reforming experimental assessment methods and models, and forming a diversified self-assessment model based on innovation ability training.

The results were adopted at the school and 13 experimental courses were offered for electronic information, communication, computer, automation, electromechanical and other majors. Before the results of the research, the experimental assessment of information technology only involved five majors. After

the research and application of the results, the students' overall practice and innovation ability are significantly improved. In recent years, the members of the research team have consistently achieved good results in guiding the science and technology competition of college students. In the 10th China Robot Competition and RoboCup Open held in December 2008, they won the first prize of the cross-footprint of the double-footed robot university group. The second step of the Ningshou Robot University Group's Narrow Footprint, the award-winning students were reported by the Qianjiang Evening News and the Zhejiang University of Science and Technology. In May 2008, the 5th Zhejiang University Student Programming Competition and the National College Student Programming Invitational Competition in October 2008 and the Zhejiang University Student Electronic Design Competition in September 2008 achieved the best results in history. (4) The "Component Software Development" course was awarded the project of Zhejiang Provincial Excellent Course Construction Project

IV. CONCLUSIONS

This course is working hard to become a quality course in international cooperation, and strive to apply for the Ministry of Education in five years.

Demonstration course. Through modern teaching methods and advanced teaching concepts, the course provides students with comprehensive knowledge and skills in component software development and network system development, and has the ability to develop

small and medium-sized B/S systems. We will also intensify training and introduction, further improve the level of faculty construction, actively introduce overseas talents, build project talent teams and teaching talent pools, and build a high-level project faculty.

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