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Research on Teaching Team Construction of Photoelectric International Course Group

Li Luo*corresponding author, Jie Li, Min Zhong, Yu He, Xiuying Gao

College of Optoelectronic Engineering, Chengdu University of Information Technology, Chengdu Sichuan 610000 China

Abstract: The construction of professional internationalization course groups is the inevitable trend of the development of our higher education internationalization. Based on the internationalization construction of higher education, combined with the orientation and social demand of our university's application-oriented undergraduate talent training and photoelectric major training program, this study takes the construction of photoelectric international course group as the core and the construction of high-level innovative and skilled talents as the breakthrough. Strive to build a sufficient number, reasonable echelon, excellent quality photoelectric international course group teaching team. Through the cooperation mechanism, the team members optimize and integrate relevant resources, and build an international teaching platform of professional courses centered on "Optical Fiber Communication Technology" (bilingual), "Microsystem integration" (bilingual), "Electromagnetic Compatibility Technology" (bilingual), "College Physics" (bilingual), "Photoelectric Professional English". The curriculum group is complementary and interrelated, forming "surface" from "point", presenting a systematic, scientific and applied international photoelectric curriculum system for students.

Keywords: International course group; Hierarchical management mode; Teaching team

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1. The introduction

In 2007, the Ministry of Education listed teaching team building as one of the important contents of the teaching quality and teaching reform project of colleges and universities. In 2012, the Ministry of Education, in the new measures to comprehensively improve the quality of higher education and promote the conformal development of higher education, once again emphasized the need to improve the construction of grassroots teaching organizations such as teaching teams^[1,2]. The Optoelectronic Engineering department has also actively joined the internationalization of higher education. Since the first bilingual course "Optical Fiber Communication Technology" was opened in 2009, international courses for undergraduate and graduate students, such as Sensor Principle and Application (bilingual), Basis of Materials Science (bilingual), Microsystem Integration (bilingual) and Professional English for Optoelectronics, have been built for different professional directions, as shown in figure 1. From the beginning to the present, we have accumulated a lot of materials and experience in teaching staff, teaching resources, teaching courseware, teaching means and teaching quality monitoring, and achieved better teaching results and teaching feedback.

However, there are still shortcomings in the construction of teaching team. Firstly, it is obviously more challenging for professional teachers to use English as a teaching method at the present stage. Due to the weak language foundation, they often fail to grasp the key points in the process of English teaching, which weakens the teaching quality^[3,4]. For English teachers, they may lack sufficient professional teaching experience and a deep understanding of interdisciplinary theories, so they cannot engage in professional teaching within a limited time. Therefore, how to create a professional teaching team mainly in English or bilingual teaching is the first urgent problem to be solved^[5]. According to the survey, there is no research result and application of comprehensive reform of photoelectric courses by teaching team from the perspective of international curriculum group. From the teaching perspective of pro-

fessional course groups, how to reform and innovate the international course content for the independence, systematism and integrity of the basic knowledge of optoelectronics is the second urgent problem to be solved. At the same time, there are few teaching platforms of photoelectric international course group, so it is very important to build a high-quality teaching platform of photoelectric international course group for cultivating international photoelectric professionals.

2. Practice reform contents

2.1 Formulate teaching team construction plan for international curriculum groups

With the "student-centered" approach, combined with the positioning of the school, the characteristics of the discipline and the needs of teaching reform, the overall development of the school's majors, courses and teachers are coordinated. The teaching team construction plans are formulated by types, and the ideas and specific measures for the teaching team construction are put forward. Relying on the teach-



Figure 1 Photoelectric international course group

ing reform and research projects, a stable teaching team is established. Within the teaching team, the objectives and reform tasks are defined, the construction plan and work plan are detailed, the overall goals are broken down into specific phased goals, and the collective goals are broken down into individual goals to be realized. According to the task of team building and the implementation of the teaching team, we will organize and carry out the assessment and evaluation.

2.2 Promote the hierarchical management mode of international curriculum group teaching team

Promote the management of international teaching team to implement the college, team hierarchical management mode. At the level of the school, the construction planning and management methods of the teaching team should be formulated as a whole, the coordination mechanism should be improved, the teaching team should be selected and approved, a good working environment should be provided, the problems encountered in the team building should be solved, and the project execution, guidance and supervision should be strengthened. The teaching team shall carry out independent management, formulate implementation plans, and the team leader shall play an effective leadership role and establish a team cooperation mechanism.

2.3 Innovate the management mechanism of international teaching team

The effective operation of international teaching team requires the innovation of management system and mechanism, and provides support and guarantee in the aspects of policy, teaching resources, funds and hardware and software conditions. By establishing flexible talent attracting mechanism, we can perfect international curriculum system and talent training mechanism, create international teaching management and scientific research environment and establish the teaching quality supervision system and student evaluation system of the teaching team. Thus, we will strengthen the coordination mechanism, encourage the interdisciplinary teaching team, formulate scientific and reasonable performance indicators and implement effective performance evaluation system. By reforming the evaluation system, the salary distribution and professional title promotion of team teachers can be linked to team performance, thereby introducing competition mechanism and incentive policy.

2.4 Reform the teaching organization model of international curriculum groups

We can innovate teaching organization model, with high teaching level and profound academic achievements teachers as leaders, to form an international teaching team with complementary advantages, gather high-quality international teaching resources, establish an international curriculum system. At the same time, we promote the professional growth of the team of young teachers, encourage teachers to "go out" to study abroad, participate in international academic exchanges, and improve the professional level and teaching and research ability of the team, thereby promoting the teaching reform and the construction of all-English curriculum, and cultivating international innovative talents in cross-disciplines.

2.5 Strengthen teaching content construction of international curriculum groups

For the courses of Optical Fiber Communication Technology (bilingual), Microsystem Integration (bilingual), Electromagnetic Compatibility Technology (bilingual), Energy Revolution and Climate Change (bilingual), College Physics (bilingual), and Professional English, excellent foreign original textbooks in the same field are selected appropriately, while grasping the international academic fron-

tier and disciplinary development trends in this field. We can integrate new technology and subject resources into teaching resources, determine curriculum content and develop syllabuses. Through the cooperation mechanism, the team members optimize and integrate relevant resources, complement and relate each other in the setting of course content and outline, form "surface" with "points".





Figure 2 Explores the characteristic teaching mode integrating multiple teaching methods

According to the characteristics of different courses, we will combine offline multimedia teaching with blackboard teaching, and use various methods for blended teaching, such as micro lesson demonstration methods, Matlab, CST and other software simulations, classroom teaching and group discussion methods, experimental operations and online resource sharing practices, as well as Q&A and discussion, to explore the unique teaching modes of each course and improve the teaching effectiveness of the course, as shown in Figure 2. For different types of international courses, we will explore a teaching method that combines transitional English teaching mode and maintenance English teaching mode.

2.7 Build a teaching platform for high-quality international photoelectric courses

We will focus on the construction of "Optical Fiber Communication Technology", "Microsystem integration", "Electromagnetic Compatibility Technology", "Energy Revolution and Climate Change", "Photoelectric Professional English" teacher classroom as the main body, combined with the construction of online and offline teaching platform, while also constructing an open network teaching platform for " College Physics".

3. Conclusion

On the basis of clarifying the connotation of international teaching teams in colleges and universities, aiming at the existing problems in the construction of international teaching teams in colleges and universities, this study discusses the construction methods of photoelectric international course group teaching teams from the aspects of construction planning, hierarchical management, management mechanism innovation, organization mode, teaching content construction and teaching mode specialization, which can effectively promote the construction of international teaching teams in colleges and universities.

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