

Research on Curriculum Teaching Team Building under the Background of Project-based Teaching Reform

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Abstract: Combined with the project-based teaching reform that the institute is vigorously promoting, the research group has studied and practiced the application of the project-based teaching mode based on modules in the core course of building intelligent engineering technology “Security and Prevention Technology”, summarized the measures and achievements of the construction of the curriculum teaching team, and believed that the modular teacher team is the key to the project-based teaching reform, close and in-depth school-enterprise cooperation is the prerequisite for the normal operation of the teaching team, and the support of national and institute policies and systems at all levels is the guarantee for the growth and development of the teacher team.

Keywords: Teaching mode; Project-based; Curriculum teaching team; Intelligent building engineering technology

Fund Project:

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1. Introduction

There are two forms of modular teaching. MES (Modules of Employable Skills) determines modules based on post tasks and takes the completion program of actual post work in a certain occupation as the main line, which can be called “task modules”^[1]. CBE (Competency Based Education) determines the modules based on the executive abilities and determines the teaching main line based on the cognitive abilities and activity abilities engaged in a certain occupation. It can be called “ability modules”.

MES starts from the work specification of the specific job, and focuses on the work ability of the job. Starting from the general rules and needs of the profession, CBE focuses on the basic general abilities of the profession. MES lacks the teaching and learning of systematic knowledge, which is suitable for skill training and not suitable for school education and teaching. CBE is based on the practical abilities required for the implementation of work tasks and abstracts it into a theory, ignoring the docking with the work process and not having strong adaptability to the position.

The modular project-based teaching makes full use of the teaching environment of the school, integrates various online and offline resources, carries out project-based design of teaching content, and cultivates students’ vocational work abilities. Combining with the project-based teaching reform carried out by Jiangsu Maritime Institute, the research group has carried out research on the construction of teacher team in the reform.

2. Overview of the teaching team of «Security and Prevention Technology» course

“Security and Prevention Technology” is the core compulsory course of building intelligent engineering technology major, which is opened in the first semester of sophomore year. It is a practical engineering application-oriented course.

This course used to adopt the traditional teaching mode, mainly classroom teaching equipment principle and system function, combined with experimental practical training equipment to carry out on-site teaching. As the learning content is related to the actual engineering project but not closely enough, students are not clear about the requirements of vocational duties and skills, the knowledge and skills mastered at a certain stage will be forgotten soon, the ability of data collection, screening and integration needs to be improved, and the ability of practical ability and engineering application transfer of knowledge and skills is weak.

The teaching team consists of full-time teachers and enterprise technicians. Full-time teachers are 1-2 people who teach this course and are the main undertakers of related work such as course teaching. Enterprise technicians provide engineering and technical information, communicate with full-time teachers on professional issues, and generally do not contact with students directly. The team structure is not perfect, and the form and content of cooperation are relatively simple, which does not give full play to the advantages of the university and enterprise.

3. Measures and effects of the teaching team building in project-based teaching reform

3.1 Composition of the teaching team

Teachers are the foundation of vocational education reform. In the critical period of educational transformation and development in the new era, as the leading force in education and teaching, the quality of teachers directly affects the quality of personnel training^[2].

This requires teachers to not only understand the cognitive characteristics of students, but also be familiar with the specific requirements of engineering projects and corporate positions. Full-time teachers are more familiar with the former, and enterprise technicians are better at the latter. However, in the design of teaching projects, in addition to full and in-depth communication between full-time teachers and enterprise technicians, in order to achieve teaching goals, enterprise technicians need to be directly involved in specific practical teaching, and industry experts are also needed to give macro guidance.

In order to comprehensively promote the ideological and political construction of the curriculum, guide the values in the knowledge transfer and ability training, and help students to shape the correct world outlook, life outlook and values, ideological and political teachers need to be included in the teaching team.

Relying on the close school-enterprise cooperation relationship, the teaching team integrates the forces of intelligent building industry, intelligent building enterprises, schools and other parties to build a structured teaching team including experts, enterprise technicians, professional teachers, ideological and political teachers. Team members have their own expertise, prepare lessons collectively, give full play to their own advantages, and take charge of different teaching contents, so as to promote the smooth realization of the teaching goals of moral cultivation and technical training. At the same time, enterprise technical experts bring the latest technology and resources to the teaching, constantly expand the project case base, introduce new technologies, new processes, new systems.

3.2 Operation guarantee of the teaching team

To build the above teaching team, it is necessary to establish smooth and efficient communication channels between secondary colleges and between schools and enterprises, which requires the guarantee of relevant policies and mechanisms.

The College has a relatively comprehensive policy to promote the development of teachers and teaching teams. Such as professional and technical qualification assessment work methods, faculty continuing education management methods, full-time teacher enterprise practice management methods, enterprise part-time teachers management methods. These policies provide a strong guarantee for the work of the teaching team.

The electrical automation major of our school is the second batch of national teacher education and teaching innovation construction team, which is supported by special funds. At the same time, the school and secondary colleges attach great importance to the construction of teaching teams, actively encourage teachers and teaching teams to carry out related activities and research, and relevant management departments actively provide supporting funds.

Although the members of the teaching team have different units and different strengths, relying on the close school-enterprise cooperation relationship over the years, the members have always had business contacts, communication has been relatively smooth, and deeper cooperation is also the result of joint efforts of all parties.

3.3 Effectiveness of the teaching team building

3.3.1 The project-based teaching reform has achieved remarkable results

Based on the OBE teaching concept and teaching content module, the teaching team combined with the characteristics of students, reorganized the course content and form^[3], designed the whole course content into a general project: Design and implementation of security and protection system of the building, with the campus building which is familiar to students as the object and the knowledge,

skills and literacy of intelligent building security system engineering design and implementation as the main teaching objectives.

From the situation of resource access on the open online course platform, the modular project-based teaching mode has aroused students' enthusiasm for learning in class and out of class, and the participation rate, pass rate and head-up rate have been improved. From the classroom test and final examination, the teaching knowledge goal was achieved. According to the design results submitted by the same group before and after class, the design ability of students' security subsystem has been improved. Students' ability of information collection and resource integration has been improved, their language expression ability and summarization ability have been exercised, and their core vocational skills have been improved. Through the design and implementation of each security subsystem, the students' teamwork spirit has been gradually enhanced, and good behavior habits have been formed, and quality goals have been achieved.

"Security and Prevention Technology" was identified as the first batch of school-level project-based courses, and the full-time teachers successfully passed the school's first batch of personal teacher project-based ability assessment. At the same time, the experience of project-based teaching reform has been applied to another professional course of intelligent building engineering technology, "Intelligent building System Design", which has been recognized as the second batch of school-level project-based courses.

3.3.2 Rapid growth of team members

Judging from the feedback of all parties, the teaching team's teaching recognition and satisfaction have been significantly improved, and the teachers' teaching abilities have been enhanced. The title of course leader was successfully promoted to deputy senior, and the new teachers grew rapidly. One team member won the third prize in the 2023 Jiangsu Teaching Ability Competition, one team member guided students to win the provincial first prize in the 2023 "Internet + Innovation and Entrepreneurship Competition", and one team member won the first prize and one team member won the third prize in the 2023 Micro Class Competition of the institute.

In terms of teaching and scientific research, the team members have achieved fruitful results in the past two years. One of the team members has initiated the 2023 Basic Science (Natural science) research project in Jiangsu Provincial colleges and universities, one of the team members has initiated a school-level project, and two teachers are about to complete their project successfully.

4. Conclusions

The modular teacher team is the key to the success of project-based teaching reform, close and in-depth college-enterprise cooperation is the premise of the normal operation of the teaching team, and the support of national and college policies and systems at all levels is the guarantee of the growth and development of the teaching team.

References:

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Correction statement:

The author's name in Volume 7, Issue 27, Page 179 of the Journal of Higher Education Frontier was incorrect. It should be corrected to: Xianmin Yang (Eurasia University of Xi'an, Xi'an, Shaanxi 710000, China).