Practice on Integrated Curriculum System of Prefabricated Building Based on X-Certificate

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Abstract. Based on the analysis of occupation post ability and the integration of the X-certificate standard, the specialty group of architectural decoration engineering technology respectively constructs specialty group curriculum system of three modules and two fusion which is suitable for 5 major fields of architectural decoration engineering technology, construction technology, architectural design, engineering cost and property management, and persists in the organic combination of occupation orientation and learning objectives, and takes the training of compound innovative technology skilled talents as the guidance. Optimize the modular curriculum system of "specialty basic platform + specialty module (X-certificate) + personality development", realize the ability centered talent training process according to the formation order and needs of ability, and form a curriculum system of "project through ability training and action to promote ability formation".

Keywords: Specialty Group · X-certificate · Curriculum System · Prefabricated Buildings

1 Introduction

1.1 A Subsection

According to the requirements of enterprises, the courses are set, the skills are set according to the post standards, the quality is tested according to the social evaluation, the development of the specialty group guided by the social needs is highlighted, the market, enterprises, posts and social needs are put in the first place in the development of the specialty group, and the social attributes, professional characteristics and characteristics of each specialty in the specialty group are strengthened. Strengthening the connotation construction of specialty group, making the specialty group have the forward-looking, advanced and driving ability, based on the analysis of the occupation post ability, and integrating into the X-certificate standard requirement, respectively constructs the three modules and two fusion specialty group curriculum system suitable for 5 specialties of building decoration engineering technology, construction engineering technology, architectural design, engineering cost and property management. Adhere to the organic

combination of career guidance and learning objectives, take the cultivation of compound innovative technical talents as the guidance, optimize the modular curriculum system of "specialty basic platform + specialty module (X-certificate) + personality development".

At the same time, the dynamic adjustment of curriculum system and curriculum standard updating mechanism should be established. By introducing the advanced concept of international vocational education and the national professional teaching standards, integrating the ideological and political elements of "cultivating morality, cultivating people and cultivating faith" and the spirit elements of "meticulousness, delicacy and delicacy" craftsmen, the "X" vocational skill level certificate requirements and new technologies, new crafts and new norms into the teaching content, a set of school-based curriculum standards and practical training standards for specialty groups are developed, Realize the integration of skill training and professional quality training.

2 Talent Training

2.1 Talent Training Mode of Specialty Group

According to the specialty characteristics of lean construction and taking "building integration - digital design - prefabricated decoration- intelligence maintenance" as the main line, the specialty group of architectural decoration engineering technology constructs the innovation of "integration of courses and certificates and ability standard" of prefabricated building integration based on information technology.

2.2 Occupation Post

The specialty group of architectural decoration engineering technology connects with the construction industry chain. The professional group of architectural engineering technology provides technical solutions for the green transformation of the construction industry, undertakes the core technology of lean construction, and implements industrial production and assembly construction; Architectural design is oriented to the integration, standardization and component integration of architecture and interior decoration; The major of architectural decoration engineering technology jointly implements talent training in the direction of industrialized production, assembly construction and information management of indoor and outdoor decoration. The construction cost chain provides effective guarantee for the efficient and professional construction cost control. The property management specialty provides all-round intelligent management and control for lean construction projects, realizes the integration and efficient collaborative management of various business links, realizes the intelligent transformation of the construction industry, and provides intelligent operation and maintenance technical support. The 14 typical posts in the group are mainly concentrated in production links such as drawing, design, construction, supervision, budget and technical management.

2.3 Core Ability

Under the concept of result oriented education, combined with industry development, job needs, advanced experience of brother colleges and students' sustainable development requirements, it is determined that the core competencies of talent training are: communication and cooperation (cooperation), learning and innovation (learning), responsibility (responsibility), problem raising and solving (thinking), professional skills (professionalism) and professional quality (Development), Follow the curriculum development mechanism of "post leading, achievement center, scientific setting and continuous improvement", deepen the reform of talent training scheme, build specific measurable professional ability indicators according to core competence, reconstruct the curriculum structure, and form a general module of professional group, general module of post group, post core competence module and career development module, which vertically echo the core competence and competence indicators, Reverse design the curriculum system from top to bottom. Horizontally integrate specialty, teachers and training resources to realize resource co construction and sharing.

2.4 Curriculum Standard Design

In terms of curriculum standard design, it takes the post ability as the center and the working process as the basis to refine typical work tasks and develop learning scenarios targeted. Through enterprise research and graduate return visit, modular teaching and modular assessment are realized according to the job demand and work process, based on the analysis of typical work and the professional demand of the job. The design of the curriculum standard considers the high integration of "work" and "learning", pays attention to the combination of theory and practice, and connects with the post needs to realize the cultivation of professional ability. At the same time, strengthen the design of comprehensive quality courses and cultivate students' innovative spirit and quality (Fig. 1).

The curriculum standard content is designed according to the course of students' learning activities and the actual working process of the post. Transform the contents to be mastered in the theoretical knowledge points into the task points to be completed by the project, import them with actual cases, and cultivate students' six core abilities through project training. Through the multi-directional cultivation in the form of task leading, project driving and group cooperation, students' learning interest, enthusiasm and initiative are better mobilized, and students' thinking ability, innovation ability and sustainable development ability are strengthened.
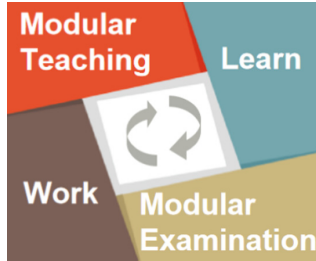
Fig. 1. Schematic diagram of core principles of curriculum standard design for speciality groups

3   Implementation Measures

3.1   Practice the Reform of "Three Educations" and Promote Classroom Revolution

With the cultivation of the characteristics of professional groups as the main line, carry out education and teaching reform with the cultivation of developmental, innovative and compound technical and skilled talents as the core. Reform teaching methods and means, strengthen the concept of "student-centered", widely use heuristic, inquiry, discussion, participatory and studio teaching to stimulate students' motivation for active learning, pay attention to students' vocational cultivation education, and enhance students' learning ability and sustainable development ability. Apply modern information technology to transform traditional teaching, explore flipped classroom and mixed classroom teaching, and promote the formation of mobile and personalized learning methods. Strengthen the learning process management and assessment evaluation with the goal of educating people, and implement the post replacement and job rotation of students during the post internship according to the training objectives. Deepen education and teaching reform, cultivate major theoretical research achievements, publish high-level teaching research papers, actively participate in the application of provincial and national teaching achievement awards, strive to win awards, and give full play to its leading and exemplary role (Fig. 2).

Fig. 2. Schematic diagram of the relationship between reform of three educations

Reform of Textbook. The teaching content introduces new technologies, new processes and new norms of the industry. The content arrangement is consistent with the teaching methods such as task-based teaching, modular teaching and case teaching. The prefabricated building is embedded in a series of teaching materials from architectural drawing, architectural structure, architectural and decoration construction technology, architectural engineering measurement and pricing to comprehensive practical training of architectural engineering, and a batch of standardized teaching materials reflecting the prefabricated building are built. Selecting and building "Interne + " three-dimensional teaching materials. In the specialized course and practical teaching, we should choose "Internet + " teaching materials that match the information teaching.

Reform of Teacher. Adhere to the principle of "school enterprise cooperation, full-time and part-time combination, key training and strengthening introduction", pay close attention to the construction of professional leaders and backbone teachers, strengthen the construction of "double qualified" teaching team with "double high" (highly educated and highly skilled) as the standard, and strive to build a full-time and part-time teacher team composed of professional leaders, backbone teachers, "double qualified" teachers, industry experts and technical backbone hired from industries and enterprises. Relax the introduction conditions for the scarce craftsmen of enterprises. Standardize the enterprise practice training system for teachers, include this into the professional title evaluation conditions, encourage teachers to participate in school infrastructure projects, and improve teachers' professional skills and the proportion of "Double Teachers". Use online and offline to carry out training on the improvement of teachers' ability and information-based teaching ability for existing teachers, so as to improve teachers' teaching ability and comprehensive quality. Set up a structured teaching team, such as drawing group, structure group, budget group, etc., and divide the work of writing for modular teaching. Promote the $1 + X$ certificate system, train key teachers to become certificate "trainers", so that teachers can not only teach in schools, but also carry out vocational qualification training, and enhance their social service ability.

Reform of Pedagogics. The school classroom carries out the reform of teaching methods such as situational teaching, modular teaching and practical project guidance, and combines teaching with enterprise post tasks to achieve the integration of industry and education. Using innovation of online and offline hybrid teaching mode. Make use of the existing digital teaching resources such as high-quality online open engineering and online and offline hybrid courses to change the traditional teaching classroom and develop the second classroom to meet the students' needs of learning, communication, answering questions and solving doubts anytime and anywhere (Fig. 3). Take the school infrastructure construction site as a place for practical learning. From materials, technology, construction technology to project management, students can go to the construction site to study. At the same time, they can make videos of the construction process on the construction site and incorporate them into teaching resources to facilitate students to study at any time. Enterprises with graduates as entrepreneurs are incubated in the professional group. Companys are located in the school and funded by the school. Students carry out practical exercise in the enterprise, and take the senior and junior students to achieve the purpose of cultivating students.

Fig. 3. Schematic diagram of hybrid teaching mode on and off the line

3.2 Construction of Teaching Resources

Practical Teaching System. In the course construction and reform, we should enrich and improve the professional teaching steering committee dominated by enterprise technology and management personnel, adhere to the basic knowledge, resolutely get rid of the shackles of the "discipline type" system, take the principle of necessity, sufficiency and consideration of follow-up development as the principle, follow the goal of serving "reality, practicality and practice", and adhere to the principles of "comprehensive implementation of professional basic courses" and "mature technology and management norms for professional course teaching", Conduct in-depth analysis and demonstration on the current curriculum system, and form a perfect curriculum system reflecting the combination of work and study and practical teaching. In particular, we should strengthen the construction of practical curriculum system and build an independent practical teaching system, especially the practical teaching system with vocational ability training as the core. Take the backbone teachers as the curriculum leader, absorb enterprise technical experts, form a diversified curriculum team of teachers, organically combine the post standards and vocational skill appraisal standards, carry out the construction of high-quality core courses to cultivate students' key abilities in vocational posts, and form an autonomous learning network course.

Digital Resource Platform. Network-based curriculum teaching is a teaching process based on modern educational thought, modern information technology and multimedia and network. It has the advantages of interactivity, sharing, openness, cooperation, autonomy, freedom from time and space, many high-quality resources and convenient use. It is not only an innovative education model, It is also an important part of the education for all and lifelong education system. During the construction of this professional group, the construction level will be gradually improved based on the construction of three professional teaching resource libraries of architectural engineering technology, architectural decoration engineering technology and architectural design. At the same time, the teaching management mode will be changed according to the resource construction. We build a digital resource platform including a variety of resources, such as excellent online open courses, online and offline hybrid gold courses, offline project gold courses, textbook by school and enterprise co-edited and five high-quality platform courses, so as to realize co-construction and sharing in specialty group.

Construction of Training Base. We build a training base of virtual reality simulation with open and shared in the school based on the core skill training of all specialties in the specialty group and on the basis of existing training studios. We Optimize and integrate six public basic training platforms. We build training bases outside the school with well-known enterprises. According to the requirements of "from the site, higher than the site",

highlight the construction of real or simulated environment, and transform the training center and training base. And strengthen the management of the training base, especially the establishment of the sharing mechanism inside and outside the school, and implement the enterprise management and market-oriented operation. The enterprise management is mainly to create an enterprise professional atmosphere. The training methods and processes are enterprise oriented. The market-oriented operation refers to the accounting of the training cost according to the market requirements, and strengthen the equipment management, tool management, material management and teaching management, Through scientific management, we will gradually form a series of training projects, supporting training materials, first-class instructors and perfect management norms. Ensure the construction of a high-level training base for higher vocational education with strong educational reform, high equipment level and high-quality resource sharing. Expand the engineering material testing center and engineering survey training center, upgrade and transform the building information model training room, build a new construction engineering drawing, drawing recognition and drawing review training base, build a new construction engineering virtual simulation center, a new BIM Engineering Center, a new fabricated engineering training center and a fabricated construction teaching platform, a new building MR intelligent laboratory, building planning and design studio, a new virtual simulation training center "Comprehensive practice base of project cost on campus", "model technology training room", "architectural decoration art and entrepreneurship incubation base", etc.

Technology Innovation Platform for Specialty Group. We implement education of Innovation, creativity and entrepreneurship, build skill master studio, and incubate students' innovation and entrepreneurship; Relying on the innovation platform of architectural decoration technology and skills, build six service centers, including prefabricated building research center, mobile information measurement center, BIM collaborative education center, architectural decoration design creative center, intelligent building space research center, engineering material testing center, etc., and landmark achievements such as scientific research and social service platform and intellectual property rights have been built (Fig. 4). Establish a working mechanism to actively carry out technical services to the society, carry out research aiming at the practical problems in China's infrastructure construction, and the research results have an important impact on engineering practice and play a positive role in promoting social progress; Establish and improve the incentive system for professional teachers to closely contact construction enterprises and serve the industry and society, participate in enterprise technical creativity and R & D, and improve technical service ability; Establish a construction vocational skills training center to provide vocational skills training services for construction enterprises and society, expand the retraining of social on-the-job personnel, vocational qualification certificate training and certification, and cultivate talents urgently needed for the construction development of Dawan district; Carry out horizontal projects and enterprise technology research projects at multiple levels, and the average annual amount of accounts received shall not be less than 1 million.
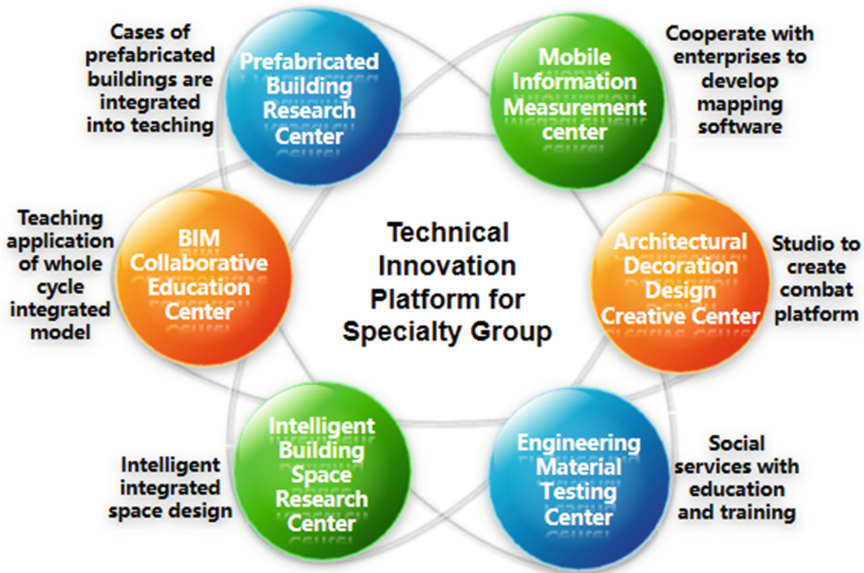
Fig. 4. Composition diagram of technical innovation platform for architectural decoration engineering

4   Construction Effectiveness

Adhere to the organic combination of career guidance and learning objectives, take the cultivation of compound innovative technical talents as the guidance, optimize the modular curriculum system of "specialty basic platform + specialty module (integrated into x certificate) + personality development", set up 3–5 general specialty basic courses in the general platform module, and jointly develop and promote the "X" vocational skill level certificate, Certificate module set 8–12 specialty core curriculum, personality development module set up 8–20 personality development courses, to ensure the effectiveness of the ability training in the process of education and teaching, and reasonably carry out the relevant ability training in the limited teaching time. The training process is based on the order and needs of ability formation to realize the ability centered talent training process, and form a curriculum system of "project through ability cultivation and action to promote ability formation" (Fig. 5).

Through the construction of specialty group, the college will be built into an international talent training base dedicated to China's Renaissance, promoting national industrial upgrading, conforming to the national industrial strategy and having a comprehensive industrial frame, and provide high-quality industrial talents within the whole industrial chain.

Specialty group of building decoration engineering technology has five directions, including space transformation, garden design, municipal engineering, smart home and Internet plus. At present, the professional group is developing in coordination with multiple majors, with high-quality teaching innovation team and excellent experimental and training base conditions, and the scientific research innovation system is gradually

improved. The specialty group has distinctive school running characteristics, advanced education concept, and talents have an international vision. According to the general idea of the "2332" talent training mode reform of the University, the talent training mode of "integration of work and learning, project orientation, equal emphasis on morality and technology, and integration of entrepreneurship and innovation" has been explored and improved on the basis of many years of practice, which has laid a solid foundation for cultivating high-quality and high skilled double high talents with professional ability, innovation ability, sustainable development ability and international vision.
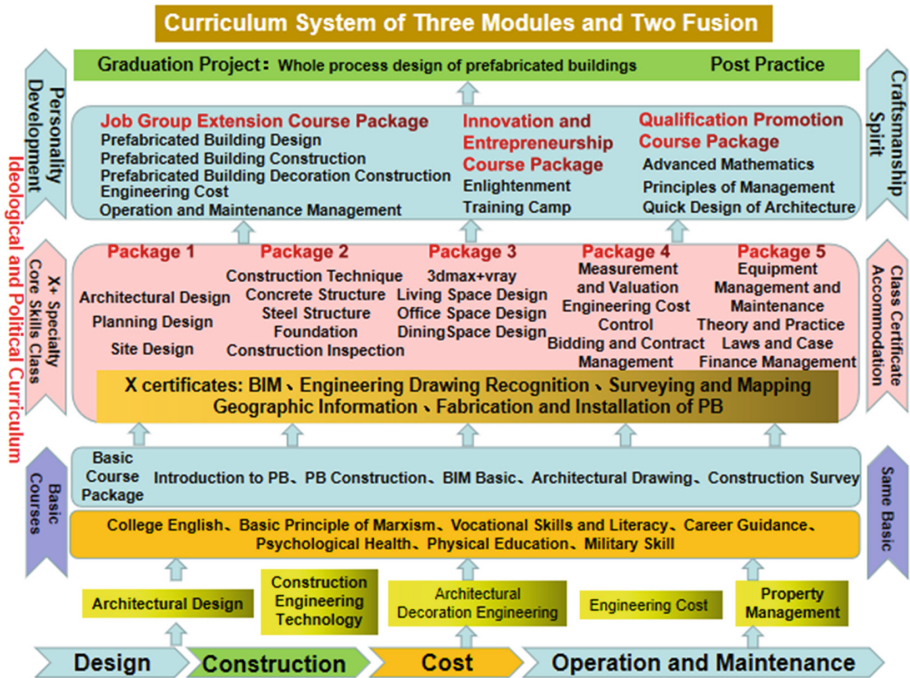

Fig. 5. Curriculum system of Specialty Group of architectural decoration engineering technology

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