

Exploring the Reform of Architectural Decoration Engineering Technology Curriculum System under the Background of Assembled Decoration

Qian Yang

Chengdu Agricultural College, Chengdu, Sichuan, China

Abstract: With the continuous advancement of the assembly of the construction industry, it has brought a huge opportunity for the development of the decoration industry towards the direction of industrialization and made the assembled decoration become an important direction for the development of the interior design industry at the current stage. At present, the interior design market talents mainly come from the major higher vocational colleges. The content of the post course has not been updated resulted in a lack of talent in the whole process of assembled decoration. Based on this background, this paper puts forward certain thoughts on the reform of the current architectural decoration engineering technology program system, so as to explore the talent reform ideas in the assembled decoration in higher vocational colleges.

Keywords: Assembled Decoration; Architectural Decoration; Curriculum Reform

1. Introduction

Under the goal of “double carbon”, China’s construction industry is now accelerating its transition to assembly and green low-carbon oriented direction. In 2016, the country issued the “Guidance on Vigorously Developing Assembled Architecture”, which explicitly puts forward the implementation of integrated design and collaborative construction with the integration of building structure, electromechanical equipment, decoration and refurbishing. Meanwhile, it points out that the “implementation of building full decoration” should be one of the eight key tasks. “Assembled decoration” has become the new development direction of interior design [1,2]. After that, the assembled residential

construction pilots were carried out all across the country, the popularization of assembled decoration was steadily promoted, and the level of assembled building development was greatly improved. It is regarded as an important part of the current architectural design and interior design reform. The development of assembled architectural and decoration has also given rise to new design, production, construction methods, and jobs. As it goes “Industrial Transformation, Talents First”, the introduction of assembled decoration in the professional courses of architectural decoration engineering technology is conducive to solving the current shortage of relevant talents, but also broadening the employment channels for students and improve their competitiveness [3].

2. Principles and Basis for Reform

The reform of the curriculum system should find a long-term scientific positioning. At present, the rapid development of assembled decoration, parts, components, accessories, construction processes, and supervision specifications are tending to ripen. The 3D printing technology and robotic construction have also begun to enter the actual project construction, but the talents training programs and courses of decorative engineering technology in most of the current higher vocational colleges are still based on the original talents requirements of the traditional market decoration, and they haven’t keenly captured the market changes, resulting in a certain divergence between the market demand and teaching content, which inadvertently compresses the employment scope and professional growth space of the students.

Therefore, the reform of training programs and curriculum system should be based on reality, in-depth research of industries, enterprises and

positions, deeper cooperation with relevant enterprises, and active participation in relevant industry seminars to grasp the most realistic first-hand information on the professional development needs. As the materials, technologies, and standards related to the industry are updated quickly, the reform should follow the principle of sustainable development, and have certain foresightedness. In the meantime, it shall supplement the important cutting-edge knowledge and sustainable development of the knowledge content, so that the reform can be carried out gradually, continuously and progressively year by year.

3. Contents and Measures of Reform

The research shall be carried out under the guidance of industry standards such as “Standard for Model Selection of Assembled Residence” and “Technical Standard for Assembled Interior Decoration”, and take the demands of the industry and enterprises as the outline. First, conduct the project research and analysis, analyzing the current situation of the training of technical talents in the assembled decoration and the job demand, as well as the construction situation of related colleges and universities. After the analysis, the research on curriculum teaching reform is carried out from the aspects of “construction” curriculum, “innovative” teaching method, “modular teaching design and implementation” and so on. We will explore the research on the combination of college and enterprise from the aspects of “college-enterprise cooperation”, “construction of training base”, “social service”, and then carry out the reform of the architectural decoration engineering technology curriculum system.

3.1 Optimize the Talent Training Program to Meet the Needs of Industrial Development

Assembled decoration adjusts the traditional and single private customized design, on-site wet construction, decoration talents training goal of traditional construction management mode to the training goal of modernized, technology-based, comprehensive professional and technical talents with high formal beauty creation ability who have not only master the traditional decoration capabilities, but also have the ability of in-depth design of

assembled architectural decoration, multi-project coordination, information collaboration and management, material structure design and research& development, comprehensive assembled construction capabilities.

Talent training program revision should be carried out through the enterprise research, and the students track to comb the main positions and technical fields related to assembled decoration where the current architectural decoration engineering technology students are located. The colleges and enterprises jointly develop professional curriculum specifications, revise the goals of the talent training program, and appropriately adjust the course structure and standards in accordance with the employment market demand, rearranging the required skills and finding the blind spot. Assembled decoration needs to add building structure, electric, installation, piping, BIM and other related engineering basic knowledge [4] in the original professional basic courses, so the training program needs to accordingly increase the courses of “Unified Standard for Building Information Modeling” and “Assembled Building Plans and Construction”. Also it adds the corresponding content to cultivate students’ rational understanding of assembled decoration in the original first-year courses such as “Building Architecture”, “Construction Equipment and Plan” and other professional basic courses, to help students to build up a comprehensive knowledge of the industry, and at the same time, adds corresponding chapters in the courses closely related to the whole project of assembled decoration, such as “Building Materials”, “Building Structures”, “Building Construction Technique” and “Building Construction Organization”.

3.2 Innovate Curriculum Standards and Optimize Curriculum Structure

The biggest difference between the current and the previous assembled decoration practitioners is that the practitioners are required to have strong comprehensive capabilities, so the curriculum standards of the new and the related courses should be jointly formulated, deepened and modified by industry experts and enterprise backbone employees. Combine the course standards and industry dynamics to ensure the high

compatibility [5] of the course standards and job practice ability.

The assembled decoration does not currently occupy a mainstream position in the market, because the technology of development of the new things in the early stages is of immaturity and rapid iteration, and the market will still be dominated by traditional decoration for a long time in future, also the gusset ceiling of the traditional decoration and lightweight partition wall is also a part of the assembled decoration. Therefore, the course structure should still be based on the traditional knowledge. Incorporate assembled knowledge in the existing teaching content, at the same time, the enterprises are also constantly researching the technical solutions in the project, such as pipeline separation technology, overhead technology, modular technology, the integrated bathroom technology, etc. The technical means are constantly innovating and developing, so the course content shall try to adopt the project-based teaching and modular processing, so as to facilitate the annual knowledge update and content replacement [6].

Meanwhile, as the assembled decoration needs to cultivate a high-quality teachers' team with strong comprehensive ability who are skillful in the basic knowledge of structure, installation, piping, and electrical appliances, it can set up a trans disciplinary high-quality courses to make up for the lack of comprehensive ability of the teachers.

3.3 Improve the Practical Training Program and Integrate Innovative and Entrepreneurial Thinking

At present, the curriculum arrangement and teaching form in higher vocational colleges are designed to cultivate solid professional knowledge and strong practical skills of the students. It is difficult for the students to develop the habit of passive acceptance in the learning process, so they are lack of independent learning ability, comprehensive analysis capabilities, and innovative consciousness. What the assembled decoration needs are knowledge compound talents from the design, production and construction organization and management in the early stage and the information maintenance technology in the later stage, and at the same time, need to have the ability to deal with the problems in a timely manner and the ability to

learn continuously, which are contradictory.

Therefore, it shall focus on demands of the teaching and assembled decoration enterprises, jointly establish a teaching innovation team and training base. The colleges provide the environment and conditions for infrastructure and build hardware and software equipment for practical training with enterprises, so as to solve the problem of continuous updating of equipment. The students shall be regularly put into the enterprise for internal learning, which realizes the talents training goal of integration of colleges and enterprise. The enterprise experts shall regularly give lectures in the colleges. Reshape the teaching situation and environment and carry out systematic and comprehensive college-enterprise integration [7,8].

From the four-in-one of the virtual training--simulation training--practical training--innovation training, integrate the professional knowledge, simulation training projects, real training projects, integrated interdisciplinary project, and carry out practical training cases later through the use of actual projects. Simulate the real complexity and contradiction in all aspects of the process of the projects, highlight the characteristics of training talents: applicable, innovative and compound. While cultivating professional knowledge and ability, the thinking ability, problem solving and analysis ability, innovative thinking ability, and continuous learning ability of the students shall be enhanced, so as to promote the multidimensional reform of talents cultivation and highlight the student-centeredness, and then realize the educational environment in which teaching keeps in pace with the times.

3.4 Developing Teaching Resources and Optimizing Teaching Methods

The original teaching mode of traditional decoration to strengthen the on-site construction of decoration is adjusted to focus on the design, production and construction organization and management in the early stage and information maintenance in the later stage. Integrate the teaching resources of assembled decoration in construction, decorative materials, organization and management, and design thinking. It also establishes cooperation and exchange relationship with vocational colleges with

better development of assembled decoration and improves the curriculum program and evaluation system, so as to realize a certain degree of data sharing.

Develop teaching materials and teaching aids. Establish cooperative relation with the design team which has been engaged in the design and research work in the front line of assembled decoration for a long time to realize win-win strategy through student internship and project co-creation. Build the virtual teaching resources with the help of VR and other virtual reality technology, adopting a hybrid practical teaching mode that combines virtual and real, online and offline, so as to make up for the shortcomings of the real laboratory. Create high-quality online courses and build resource libraries of teaching resources, engineering cases, video micro-courses, industry information and etc., so that the content can be updated on the mobile terminal, and the students' learning shall not be subject to the constraints of time and place.

3.5 Integration of Work Ethic and Enhancement of Professionalism

In the context of practicing the national "double carbon" goal, the adjustment of the national architectural decoration industry is a reflection of the sense of responsibility of a great nation. It actively adjusts the content of the extracurricular practice of the assembled decoration in the architectural decoration engineering course, guides the students to feel the rapid progress of our country in this field in recent years, and understand the "spirit of great country craftsman" in the new era, so as to form a sense of pride in the industry and carry out practical learning with the goal of solving practical problems.

While guiding students to solve the key technical problems of assembled decoration design and construction, the qualities of meticulousness, excellence and continuous research are implicitly integrated into the actual teaching, so as to cultivate students' basic skills and professionalism [9].

3.6 Improvement of Faculty and Special Training of Double Qualified Teachers

Teachers are the organizers and implementers of educational and teaching activities. The teachers' competence is the key carrier of the

teaching reform.

On the one hand, the college encourages "double qualified" teachers to form a professional learning community among themselves, and to actively carry out teaching and research activities and helping teachers to improve themselves in a variety of ways such as action research and case study. At the same time, the college encourages teachers to participate in different levels of academic exchanges, institutional exchanges and enterprise exchanges, guides teachers to participate in industry-related research projects, and strives to build a team of teachers led by famous teachers and supported by backbones to improve the theoretical level of teachers.

On the other hand, we adopt the method of "introducing and going out" to guide the vocational teachers to go to the enterprises for temporary post, and invite the experts and technicians of the enterprises to give lectures in the colleges. The teachers are invited to study and visit the whole process of the production and construction of the enterprises to jointly discuss the competency needs, technical problems and future development trend, so as to gain the practical experience and improve the education and teaching status, and promote the professional development of "double qualified" teachers.

3.7 Transform Single Evaluation and Optimize Process Evaluation

Because the training goals of decoration talents are more comprehensive, they are not only required to master the traditional decoration design, materials and construction, but also familiar to the assembled architectural decoration design, integrated construction, work coordination, information coordination, and at the same time, should have the comprehensive capabilities of analyze problems, solve problems, and deal with emergencies.

Therefore, the curriculum reform should provide students with more diversified teaching modes, and the assessment method should be changed from a one-time test to a long-term continuous assessment. Focus on learning process of the students, increase the proportion of open-ended tasks, evaluate students' independent learning ability, innovation ability and innovative thinking, and jointly test students' learning. The content of

the evaluation should also reduce the part of knowledge memorization, and increase the logical analysis of problems and innovative problem-solving topics. In the meantime, the students are encouraged to participate in relevant industry competitions and certificates assessment, the results of which will be regarded as the additional scoring content to enrich the assessment and evaluation [10].

4. Conclusions

The rapid development of assembled buildings has brought new development opportunities and challenges for architectural decoration projects. In order to better meet the development needs of the architectural decoration industry, the building decoration industry not only needs to be innovative in the integration of decoration structures and materials, and componentized R&D and production, but also should vigorously promote the construction of the talents team, strengthen the research on the training goals and modes of decoration talents for the assembled building, and formulate an effective curriculum system and talent training program to cultivate talents for assembled architectural decoration in a targeted way, so as to effectively meet the needs of the overall development of the assembled architecture.

Reference

- [1] Research on the Application of Assembled Decoration Technology under the Background of the "Dual Carbon" Target. *Construction Technology*, 2022 (9) 122-125.
- [2] Tsinghua University Building Energy Efficiency Research Center. *Annual Development Research Report on Building Energy Efficiency in China 2021*. Beijing: China Building Industry Press, 2021.
- [3] Zhang Ling. Application and Development of Integrated Design for Prefabricated Building Decoration. *Urban Housing*, 2021, 28 (7): 29-31.
- [4] Wang Qiang, Wang Wei, Shi Liru, et al. Research on Low Carbon and Importance of Prefabricated Decoration Basic Components. *World Architecture*, 2021 (7): 52-57, 128.
- [5] Kang Shuying's Exploration of Curriculum Reform in Environmental Design under the Background of Prefabricated Decoration: Architectural Planning and Design, 2021 (10): 65-66.
- [6] Yang Jing. Analysis of Key Issues in the Reform of Curriculum Standards in Higher Vocational Education in China. *Education and Teaching Forum*, 2016 (01): 204-205.
- [7] Wang Furong. Exploration of the Training Mechanism for Higher Vocational Prefabricated Construction Talents Based on the Integration of Industry and Education - Taking Hunan Sany Industrial Vocational and Technical College as an Example. *Sichuan Building Materials*, 2019, 45 (11): 216-217, 230.
- [8] Xu Shengcai, Su Ying, Cai Jun. Analysis of the problem of cultivating prefabricated construction talents in local universities under the background of industry education integration. *Higher Education Forum*, 2020. (7):4.
- [9] Liang Hailan, Zhao Cong, Li Yan. Goals, directions, and paths for vocational education talent cultivation in the context of building a skilled society. *Education and Vocational*, 2022 (16): 5-12.
- [10] Wang Xuedong, Ma Xiaokun. Positioning and System Construction of Talent Training in Vocational Undergraduate Colleges. *Education and Vocational*, 2022 (05): 21-27.