

# Research on The Construction of Curriculum System in the Development of National Standard for Higher Vocational Education - A Case Study of Architectural Interior Design

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## Abstract:

This paper first analyzes the research data and countermeasures of teaching standards and curriculum system construction in national higher vocational colleges. Secondly, by mining the specific practices of ideas, content, methods and actions, the application strategies and practical methods of the curriculum system construction are analyzed, so as to derive the specific content of the curriculum system. Finally, it summarizes the innovation points of the curriculum system construction and extracts them, which provides the reference paradigm and the popularization experience for the curriculum system construction of the professional teaching standard.

## Keywords:

Curriculum System, Higher Vocational Education, National Standard, Architectural Interior Design

## 1. The Basis for Building the Curriculum System

First of all, the preliminary research has organized in-depth research for 52 industry enterprises, 35 universities, and 121 graduates, including literature research, field interview, expert interview, questionnaires, and third-party organization consultation. Through the analysis and research of the research results, the following problems are found:

### *1.1. The imbalance between the supply side and the demand side needs to adjust the cultivation objectives and ways*

#### **Research conclusions:**

At present, a total of 309 higher vocational colleges, vocational universities and applied technology universities have opened architectural interior design majors (higher vocational colleges). However, with the enhancement of the competitiveness

of professional positions, the research shows that the architectural interior design talents trained by vocational colleges are out of line with the demand of the industry and enterprises, and the matching degree between the supply side of talent training and the development demand side of the industry and enterprises is relatively low. Employers generally believe that the ability of the recruited graduates to solve practical problems and their organizational and management ability needs to be improved. They not only pay attention to students' professional skills and knowledge, but also pay more and more attention to students' cultural theory level and comprehensive quality.

### **Countermeasures and suggestions:**

The curriculum system of teaching standard should be employment-oriented in the setting of training objectives, with basic theoretical knowledge and professional skills, interior design, decoration construction drawing deepening, construction management, decoration engineering measurement, and have good professional ethics, healthy personality quality and sustainable development ability.

### ***1.2. The low fit degree of curriculum and industrial transformation and upgrading needs to reform the curriculum***

Research conclusions:

As our country "innovation, coordination, green, development, sharing" development concept and demographic dividend gradually disappear, the rapid transformation and upgrading of the traditional interior design industry, great changes have taken place in the original development pattern, mainly shows the following four development trends, namely: "ecological +", "assembly +", innovation +", "digital +". At present, the traditional field workers in the construction industry are decreasing year by year, decreasing by 520,000 in 2020 and is expected by 2.35 million in 2025. Meanwhile, the demand of cutting-edge innovators will increase by 46%, and the demand for professionals will increase by 28%. Industrial transformation and upgrading will also promote the growing demand for technical skills such as 3D design, building information modeling and smart construction in the building interior design industry. The survey shows that the construction industry will increase by 58 percent by 2030. But more than 90 percent of the students surveyed said their curriculum programs did not reflect industry trends and that the content needed to be updated. [1]

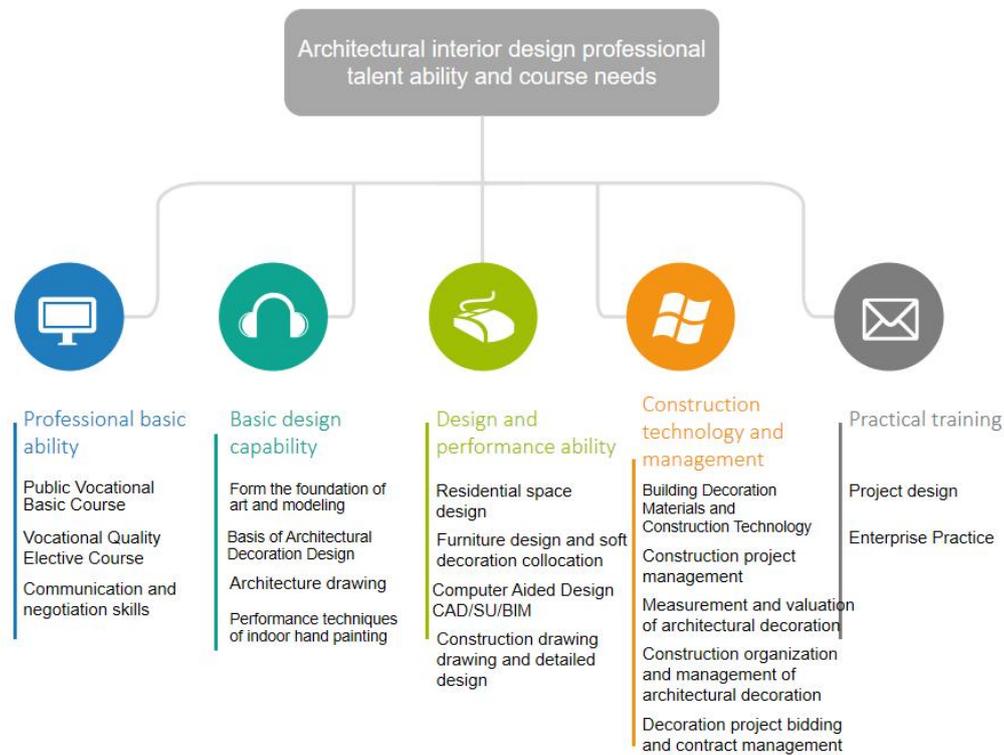
### **Countermeasures and suggestions:**

The transformation and upgrading points of the interior design industry, such as prefabricated decoration, complete decoration, green building and smart home, all bring new opportunities to the vocational education backed by the industry, which is also a great challenge. This requires that the professional curriculum must keep up with the development of The Times, carry out reform and innovation, and meet the needs of industry transformation and upgrading and development. In the curriculum system setting can be set according to the requirements of industry transformation and upgrading to expand curriculum module, schools can according to their own conditions and the regional industry development to open innovative +, digital +, ecological, +, assembly + secondary curriculum module, students can also choose according to their career planning to learn the corresponding modules to meet the requirements of industry transformation and upgrading.

### 1.3. The dispersion and heterogeneity of curriculum construction needs to build a systematic curriculum system

Research conclusions:

Employers urgently need colleges and universities to integrate with the actual positions in the curriculum setting. See the following figure for the ability and curriculum needs of architectural interior design professionals (as shown in Figure 1).



**Figure 1.** The ability and course requirements of architectural interior design.

Through the text analysis of the 11 universities, it is found that the curriculum and the national professional teaching standards; the curriculum name is diversified; the curriculum content is scattered; not close connection between the curriculum and the industry; and the curriculum of some schools is like the "compressed version" of the undergraduate curriculum system

#### Countermeasures and suggestions:

Architectural interior design major is suitable for establishing a modular curriculum system based on the working process, and the teaching method is suitable for adopting case teaching and project teaching. The curriculum system should cover the field of basic quality, one-way, comprehensive and expanded vocational skills learning field and characteristic education field. Among them, the professional core curriculum is in the core position of the professional ability generation function, such as "decoration materials and construction", "decoration construction technology", "bedroom space design", "public space design", "household and display design", "decoration construction drawing and deepening design", etc., professional core courses from the professional main job main tasks and complete the task of the core ability requirements and determine.

#### ***1.4. The path of talent training in the new era needs the deepening of school-enterprise cooperation***

##### **Research conclusions:**

According to the investigation, the colleges and universities of this major attach great importance to the school-enterprise cooperation, but the enthusiasm of the enterprises is obviously insufficient. At present, the form of its cooperation is still on the surface of school-enterprise cooperation, far from reaching the requirements of deep integration of school and enterprise. At present, the main forms of school-enterprise cooperation include: order class, modern apprenticeship, enterprise receiving interns and enterprise tutors, etc. At the same time, more than 66% of the students surveyed also agreed that the joint development of courses through school-enterprise cooperation is one of the main ways to solve the problem that their knowledge and ability cannot be matched with their jobs.

##### **Countermeasures and suggestions:**

Through research, we found that “deep integration of school and enterprise” can solve many weaknesses and pain points of professional talent training. The path of deep integration of industry and education includes the connection between majors and industries, schools and enterprises, curriculum content and professional standards, and teaching process and production process, etc. The deepening of school-enterprise cooperation requires the deep cooperation of mutual penetration, mutual support and integration between vocational education and industry, and the introduction of enterprise equipment resources and human resources to jointly build and share, so as to realize the diversification of construction subjects and financing methods. For example, school-enterprise deep integration models such as mixed-ownership industrial colleges, school-enterprise joint technology research and development centers and productive training bases need to be explored and promoted in the construction of this major.

## **2. The Method of Curriculum System Construction**

### ***2.1. Promote the mutual integration of "post-duty class competition certificate" in concept***

[2] According to the interior design, professional skills standard corresponding design consultation, design, decoration design, design modeling, design performance, design construction and other professional ability requirements to set the training target, build the corresponding curriculum system, configure the corresponding teaching conditions, training “design”, “familiar software”, “understand”, “can construction” compound technical skills. Thus reflects the common development needs of society, market, enterprises, schools and students.

### ***2.2. Both “unity” and “diversity” in content***

[3] Because the primary purpose of the national professional teaching standard is to fundamentally guarantee the unity of the connotation construction of the national architectural interior design major, and to provide a scientific reference for the curriculum system construction of the architectural interior design major in various regional higher vocational colleges, so as to improve the construction quality of the major. However, the selection and design of curriculum content, teaching methods, teaching facilities, teaching resources and teaching management are diversified.

Different regions and schools can customize the corresponding curriculum modules and teaching management system according to their own needs. In order to achieve the unity of training objectives and talent specifications and the decentralization of curriculum and teaching management.

### ***2.3. "Standardization" and "flexibility" in method***

Architectural interior design professional national teaching standard plays the "selection library" and "specification" two roles, "selection library" to curriculum module as the gripper determine the basic context and steps of the professional construction and development, "specification" in order to set the basic standards to ensure that the local schools to carry out the national education policy, reflect national will, national strategy, fit industry development, promote employment entrepreneurship, promote lifelong learning professional construction and development goals. At the same time, the professional teaching standard will be built in the elements of curriculum framework and teaching design for the local school curriculum construction provides sufficient choice, local and school level professional teaching standards along the national standards and procedures of different curriculum modules and different teaching implementation, make vocational education really play the dual function of talent training and promote the development of local economy.

### ***2.4. Take into account "principle" and "penetrability" in action***

Curriculum system the concept and principle of construction and national policy to maintain high consistency, at the same time, focus on the ability, through the modular curriculum to maximize the flexibility and feasibility of standards in operational level, module with its own independence, integrity, openness, such as local and schools in teaching standards and talent training program, so as to improve the efficiency of standard formulation and use effect. In addition, the operation is also reflected in the full consideration of the complex situation of middle and higher vocational connection, high connection, regional development and industrial chain, so as to improve the breadth and depth of the industry, post and professional ability as far as possible covered by the professional standards.

## **3. The Content of the Curriculum System Construction**

Public basic curriculum is constructed based on the public quality of students' comprehensive development. Professional basic courses based on interior design practitioners to knowledge structure, the design module including interior decoration drawing and drawing, art foundation, interior design principles and hand-painted performance techniques courses, such as construction module including interior decoration materials and structure, technology module including the building physics and equipment. Professional core courses are based on the core competitiveness of interior designer post tasks and career channels, the design module can be set up for different work areas, "bedroom space design", "public space design", "Furniture and furnishings design", "interior construction drawing drawing and deepening design" and other courses. The construction module offers "Interior Decoration Construction Technology" and "Engineering Budget Foundation" courses respectively for interior decoration engineering management. The software module includes the software commonly used for drawing construction drawing and renderings, such as Auto CAD, 3Dmax, Sketch-up, Photo-shop, Kujiale, etc. The professional expansion curriculum

module is constructed for the high-end positions and career sustainable development ability of the building decoration industry, and is designed for the new development trend of innovation +, digital +, ecological + and assembly + in the industry respectively. The practical training module follows the law of students' success, and forms a progressive practical training system, focusing on cultivating students' communication skills, leadership and teamwork skills, safety, health and environmental awareness, problem-solving and critical thinking skills, tools and equipment application skills, and business activities skills. Characteristic module to meet the personalized needs of different cooperative enterprises and students, such as for enterprises to open customized "corporate culture and standards" and "marketing" courses, facing the needs of students' research and entrance "X certificate training" and "rise this exam training" course, schools can also be set according to need different personalized courses. See the course system in the figure below (Figure 2).

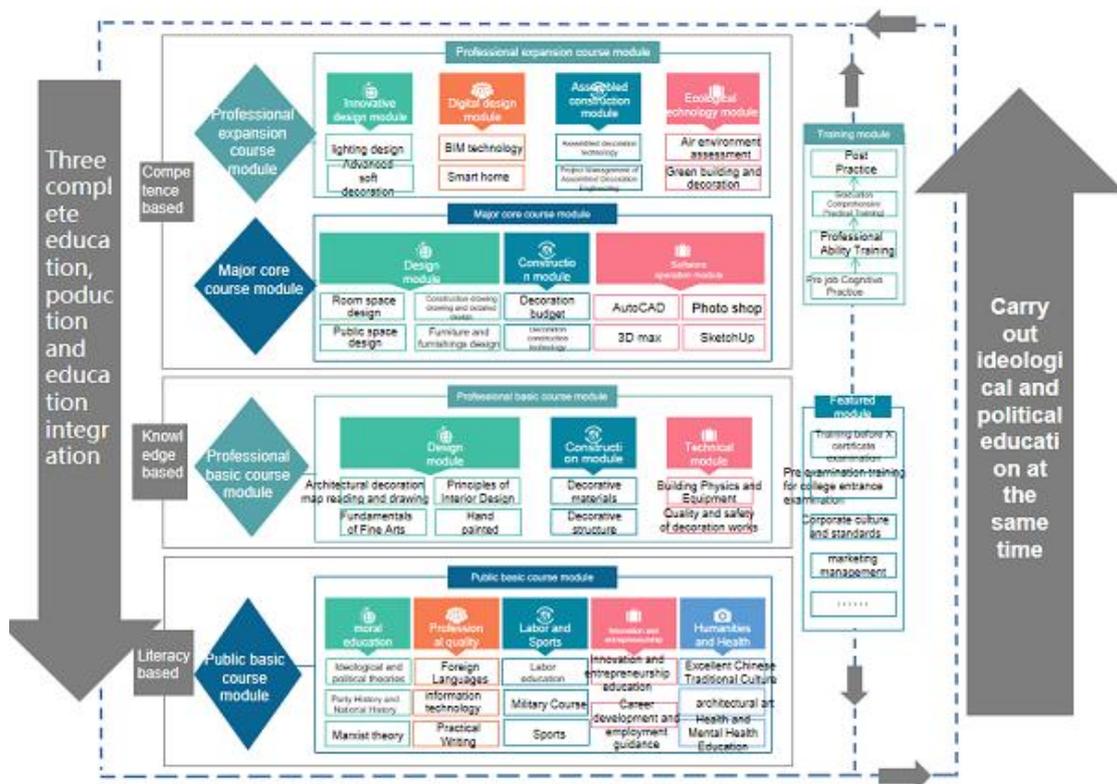


Figure 2. National Curriculum System of Architectural Interior Design Major.

## 4. The Innovation of Curriculum System Construction

### 4.1. Keep up with the industrial development trend and the industry talent demand

Docking building decoration industry of new forms, new mode, new technology and new career, follow the building decoration industry innovation +, digital +, ecological +, assembly + new development trend, to cultivate to adapt to the building decoration industry new technology, new technology, new materials, new specifications of innovative technical skills personnel as the goal to revise the professional teaching standards, the new technology, new technology, new specification, typical production cases into the teaching content. By connecting the new demand for talents of industrial transformation and development, the education chain, talent chain, industrial chain and innovation chain will be opened up.

first, In the field of architectural interior design, No innovation, no development, Therefore, this curriculum system formulated a comprehensive view of the “innovation, coordination, green, open, sharing” five development concepts, To train students to “explore new ideas and explore new forms, Capability to use new technologies” as an oriented, Set up innovation and entrepreneurship education courses in the public basic course module, In the professional development course module, set up soft decoration advancement and lighting design courses to improve students' innovative ability of interior space image design; at the same time, In the design training, not only training students' simple copying ability, More emphasis should be placed on cultivating students' ability to independently design and draw scheme drawings and construction drawings.

Secondly, in the field of digital + development, follow the direction of industrial restructuring, cultivate the development and application ability of building information model (BIM) as students' professional ability to meet the new needs of digital development of the construction industry, take computer-aided design as the core curriculum, BIM and smart home as professional development courses, teaching methods, teaching facilities, teaching resources, teaching management and other fields, promote the deep integration of modern information technology and education and teaching, and promote the improvement of teaching quality through digital.

Thirdly, in the field of ecological + development, master green production and environmental protection as students 'knowledge goal; green building and indoor environment evaluation as professional development curriculum, focus on cultivating students' environmental awareness, safety awareness and innovative thinking; teaching conditions can set up green decoration materials and process display and training center, so that students understand the latest basic knowledge and application methods of green energy-saving building decoration materials.

Finally, in the field of assembly + development, the prefabricated construction technology and factory decoration technology as the new direction of career development ability; in the curriculum of assembly decoration as the professional development course; in the teaching conditions can be set up assembly decoration training center, so that students can learn systematic thinking and industrial techniques, understand the efficient, environmental protection, cost-effective industrial decoration technology.

#### ***4.2. Docking with the professional qualification certificate***

This course system connects with the 1 + X interior design vocational skill level certificate and the “National Professional Skill Standard for Interior Decoration Designers” newly included in the “two catalogs and one system”, and fits the professional teaching standards with the talent ability demand standards for future jobs. Through docking real work process, according to the design design design design design modeling design scheme construction of interior design program construction including the basic knowledge of interior design, drawing and drawing, decoration materials and structure, decoration construction technology of basic knowledge system, cultivate students' design, design expression, deepen design, equipment coordination, design implementation, display art design, smart home services and other professional ability. In the curriculum, professional core curriculum teaching content, teachers, the configuration of teaching facilities and the enterprise industry vocational skill level requirements step in step, realize the building interior

design of higher vocational teaching to general education and typed development, meet the needs of the “post course certificate” comprehensive education mechanism, highlight the vocational education service in the construction of the social benefit of skilled society.

#### ***4.3. Build the curriculum system with the curriculum module as the basic unit***

[4] The curriculum module itself is unified and independent, and can take composed of different schools according to the multiple choice of professional development according to the orientation and development characteristics of the school. Meanwhile, it is easier to provide pre-vocational and post-vocational education, middle and higher vocational education, academic and vocational qualification education. Each course module describes an independent quality, knowledge or ability point, which standards on the mastery of professional ability, and integrates the corresponding skill modules and knowledge module.

The modular curriculum system can be flexibly adjusted according to the specific needs of each institution. At present, in the teaching standards of architectural interior design, professional expansion courses are designed in accordance with the modular form, and professional basic courses and core courses retain the traditional separate curriculum form. However, in the use of teaching standards, each school can design the separate curriculum as a modular curriculum system.

#### ***4.4. Integrate industrial development needs and students' personal development needs***

[5] Vocational education, from a national or social perspective, emphasizes the overall development of people, the professional quality and professional ability, and for students, they value the future personal development more. The formulation of this curriculum standard is based on the principle of students' success, which focuses on cultivating students' civic core literacy, industry-general ability, career-specific ability and career development ability respectively. Public basic curriculum emphasizes socialist citizen education, employment education and career development education; the basic professional curriculum module cultivates students 'industry general ability and expands their knowledge; the professional core curriculum module cultivates students' specific professional ability, innovation consciousness and pioneering spirit; and the expanded core curriculum module aims to cultivate compound talents adapted to industry transformation and upgrading, so as to improve students' service consciousness, adaptability, coordination ability, expression ability and problem solving ability. Integrating the teaching standards of industrial development needs and personal development needs can make the graduates not only have strong professional knowledge and professional ability, but also have a high comprehensive quality, and become an innovative compound talent with comprehensive development in all aspects and constantly adapt to the new environment and new situation.

## **5. Conclusions**

The construction of curriculum system in the development of national higher vocational teaching standards has been modularized according to the talent training needs of post-post course certification. Each course module describes an independent quality, knowledge or ability point, which takes the mastery of professional ability as the standard, and integrates the corresponding skill module and knowledge module. As a standard paradigm and a typical case of national vocational education, this

curriculum system has certain reference significance and promotion value for the high-quality development of vocational education.

## Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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