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Research on the "PSP two-way feedback" talent training mode innovation of integrating production and education in art and design majors

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Abstract: *This paper focuses on the study of environmental art design, from the fundamental task and requirement of "cultivating people by virtue". Closely follow the bottleneck of the quality of environmental art design talent training, and start from the common needs and objectives of the beneficiaries of talent training. By integrating the multi-channel resources of in-school and in-class, we build a "PSP two-way feedback" teaching mode of Environmental Art and Design. The three platforms are integrated and interconnected, running through the whole process of talent training, and forming an ecological system of talent training that actively meets the needs of the society.*

Keywords: *Environmental art; Integration of production and education; Training mode*

1. Introduction

In China, the development and exploration of various types of applied talent training programs in Environmental Art and Designr are conducted. After searching and sorting out the research on the teaching mode of Environmental Art and Design in China, it is found that the research on the teaching mode of environmental Art and Design major in China first started in 1998. Analysis of relevant domestic and foreign literature shows that the commonly used training modes of environmental art design majors include: training mode of professional knowledge + professional skills; cultivation mode of the platform module; studio training mode. In order to promote the integrated development of students. According to the school's orientation and characteristics, the quality development module is adjusted to five categories: humanities and social sciences, natural sciences, artistic aesthetics, health education, and expanded practice, each with several courses or practical activities for students to choose[1-2].

At present, there are the main problems in the teaching mode of environmental Art and Design major .

Many scholars at home and abroad have conducted in-depth analysis and research on environmental Art and Design major of environmental art design from different angles, but there is still a great gap between theoretical research and teaching practice in China.

(1) Curriculum design are divided between liberal arts and science, and knowledge mastery and ability acquisition are unbalanced. Students lack the ability of knowledge integration and application, which is difficult to adapt to the practical needs of manufacturing industry to solve complex engineering problems.

(2) The practice teaching effect is low . The practice system is not perfect. Practice type and function are single. Engineering practice ability and innovation consciousness are insufficient, and it is difficult to meet the needs of the development of China's design industry.

(3) The effectiveness of classroom teaching is low, the interaction between teachers and students is insufficient, and the participation of students is low, which cannot fully promote the continuous improvement of teaching and learning effect.

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2. Research purpose and reform content of talent training reform

2.1 Purpose of the reform

Combined with the new art as the breakthrough point, relying on the deep cooperation platform between universities and enterprises, the " practice (P) -learning (S) -practice training system (P) is built. Build a "PSP two-way feedback" talent training system for environmental art design. With the goal of "student center and ability cultivation", it constructs an engineering professional course platform oriented by independent learning. With the goal of "student center and ability training" as the diversified objectives, an engineering professional course platform oriented by independent learning is constructed. Focusing on the integration of cross-field resources, we will build a multi-dimensional practical teaching platform oriented by the cultivation of engineering practice ability. We build a problem-driven-oriented engineering education teaching team.

2.2 Reform ideas

(1) Training objective: Through investigating the construction enterprises, we analyze the employment needs of the enterprises, and determine the talent training objectives and training specifications of environmental art and design majors.

(2) Curriculum system: We build a curriculum system from four aspects: theoretical teaching system, practical teaching system, quality-oriented education system, and innovation and entrepreneurship system.

(3) Training mode: our component "PSP two-way feedback type" talent training mode.

(4) Guarantee platform: According to the talent training curriculum system and follow the talent training mode, we allocate resources in terms of teachers and practical conditions.

2.3 Reform content

(1) We use the integration project of industry and education to optimize the talent training curriculum system of art and design majors.

We use the industry-education integration project as the carrier to optimize the curriculum system of art classification, and use the " practice (P) -learning (S) -practice training system (P) to realize the integration of curriculum teaching system, practice teaching system, quality education system, and innovation and entrepreneurship education. The curriculum structure is constructed in accordance with the mode of "platform + module", and four curriculum platforms are set up: general education platform, subject basic education platform, professional education platform, and innovation and entrepreneurship education platform. Various curriculum modules are set up under the curriculum platform.

(2) We actively build a multi-dimensional comprehensive practice platform for industry, university and research.

By introducing enterprises into education, we promote the deep integration of industry and education, and strengthen the cultivation of students' engineering application ability. We introduce the real scene design case environment into the new practical teaching method, form a multi-dimensional interactive education scene, and realize the large-scale and regular students into the construction site to carry out course teaching and engineering practice activities. We look for comprehensive training projects from interior design sketch to 3D real scene modeling, so that students have more opportunities to visit the actual process of real scene design, and realize the seamless connection between practical training and enterprise practice.

(3) We build the "PSP two-way feedback type" art and design professional talent training mode.

We build a "teaching enterprise" and an "enterprise teaching point" to realize the "PSP two-way feedback" talent training mode. The teaching mode has realized the integration of organization and construction, training objectives, curriculum construction, practical training base construction, teaching staff construction and assessment and evaluation.

From Semester 1 to semester 2: Students receive professional cognitive education, cognitive professional characteristics, job nature, employment needs, etc. With the cooperation of enterprise teachers and school teachers, students will complete the study of public and professional basic

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knowledge, complete the training of design sketch and design color quality, and focus on mastering the basic skills of design and drawing.

From Semester 3 to semester 4:Under the leadership of dual tutors, students have a deep understanding of the design corporate culture and composition, focus on mastering the knowledge and skills of professional core courses such as architectural CAD, architectural structure, PS and 3D, and are skilled in using design software such as 3D \ CAD \ PS.

From Semester 5 to semester 6:Students enter the front-line design positions as preparatory employees. Under the leadership of enterprise teachers, they complete the comprehensive practice of indoor space design such as living space, office space and commercial space. The enterprise cultivates the students' indoor and outdoor comprehensive design ability. Students should deepen the enterprise design culture to achieve the ultimate goal of post competence, ability competence and knowledge competence.

3. Major reform measures

3.1 The team realizes the integration of industry and education roles, and builds a collaborative-oriented practice platform of industry-university-research integration.

We set up the "Art Design Enterprise Cooperation Alliance" to form a unified allocation of education and teaching resources within the alliance, guarantee the win-win situation between the school and the enterprise from the mechanism, and provide customized innovative solutions to the employment difficulties of enterprises.We actively build a teaching resource platform, a school-enterprise cooperation platform, an on-campus productive base platform, and an off-university production base platform integrating an industry-university-education base platform.

The industry-university-research integration practice platform is shown in Figure 1.

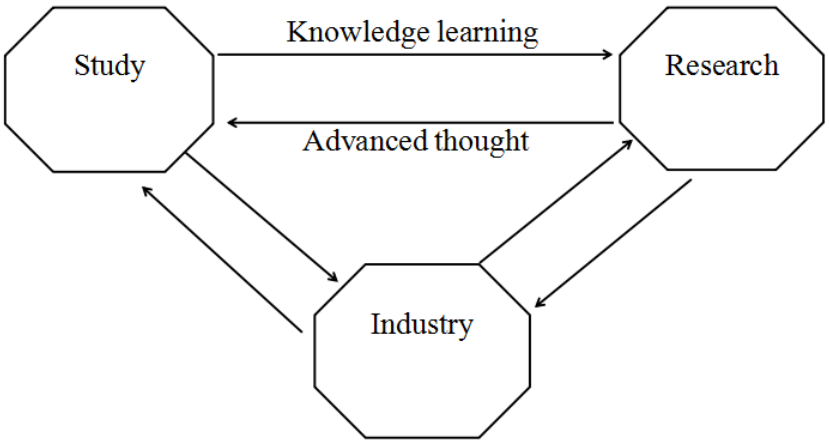

Figure 1 Industry-university-research integration practice platform

3.2 In order to achieve the integration of multiple goals, we build a new curriculum system of learning-oriented environmental art design major.

We actively meet the job ability needs of enterprises, based on solving complex engineering problems, and make corresponding adjustments to the setting of some courses of environmental art and design major.We adjusted the sketch and color course according to the practical principle, and changed to the design sketch and structural color. In the course stage of landscape sketching, we focus on cultivating students 'observation ability and enhancing students' perception ability of visual information.Using the company's standard work process, we introduce project examples in the course, and the courses are "Hand-painted Renderings Performance techniques", "Architectural Drawing and Drawing Recognition", "Auto CAD", "Foundation of Computer 3 D Design"[3].

In connection with the requirements of enterprises for talent specifications and the post ability standards of the industry, the professional curriculum system is constructed based on the work process, and the curriculum structure is constructed in accordance with the mode of "platform + module", as shown in Table 1.

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Table 1: Platform + module course structure

General education platform	Subject basic education platform	Professional education platform	Innovation and entrepreneurship education platform
Military education	Subjec basic education courses	Professional core courses	Innovation and entrepreneurship courses
Ideological and political theory course		Professional development courses	Innovation and entrepreneurship practice
Health and safety education		professional practice	
Modern information technology education			
College English course			
labour education			
Quality expansion			

3.3 We actively adapt to the integration of ideas, to build a new problem-oriented engineering education and teaching team.

We actively promote the introduction of enterprises into teaching and deepen interactive teaching. We have set up a teaching team of chief experts of large listed enterprises, and serve as the lecturers for the core courses of environmental art design major to strengthen practical understanding.

The project team takes the professional core course "Office Space Environment Design" as the pilot to explore a new teaching mode of middle class teaching and small class discussion driven by engineering problems. With the construction of "Environmental Art Design" as the starting point, the project team carried out the classroom diagnostic activity of "How to Have a good Introduction class" to improve teachers' teaching reflection ability.

4. Reform and innovation

4.1 Innovation point

(1) Innovation in the training concept: We have introduced the concept of mass entrepreneurship and innovation, and further optimized the "four platforms + three modules" curriculum system of environmental art design major, so as to realize the integration of specialized and creative content. The project team pays attention to practical teaching, increases the proportion of practice, sets up the second class, and realizes the training of mass entrepreneurship and innovation talents.

(2) Innovation on the research content: The team put forward the new goal of cultivating talents in environmental art design major who is good at innovative thinking and brave in entrepreneurial practice, which enriched the connotation of innovation and entrepreneurship education. We have incorporated the service construction of the industry-university-research integration practice platform into the construction of the practice system, so as to enhance the role and significance of the platform.

(3) Innovation on the training mode: We further update and perfect the environmental art design professional teaching mode, build the "three three, multiple drive" talent training mode, to cultivate innovative talents become the mainstream, let the students take the initiative to play a role in class, guides the students to "innovative" thinking transformation, promote all-round coordinated development of students' knowledge, ability and quality[4].

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