

Research on the Innovation of Talent Cultivation Mode of Product Design Specialty in Higher Vocational Colleges

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Abstract: Through the investigation of the current situation of the talent training mode of product design specialty in higher vocational colleges, it is found that the current talent training mode of product design specialty has some problems, such as the lack of pertinence in curriculum setting, inaccurate orientation of talent training objectives, and insufficient practical teaching conditions. Therefore, in the context of the new era, higher vocational colleges must establish a talent training system oriented by job demand, strengthen the construction of "double qualified" teachers and practical teaching conditions, optimize the curriculum structure system, pay attention to practical links, and actively promote the innovation of the talent training mode of product design in higher vocational colleges.

Keywords: Higher vocational colleges; Product design; Innovation research

1. Introduction

Product design is a professional and practical professional activity. With the progress of society and the development of science and technology, the form and function of industrial products have undergone great changes [1]. Therefore, product design talents are more and more widely welcomed by the society. However, there exists serious incompatibility between quantity and quality of product design talents [2]. At present, there are many problems in the training of product design professionals in higher vocational colleges, including the lack of pertinence in the curriculum, and disconnection with market demand; Teaching staff construction level is not high, practice teaching conditions are insufficient. With the development and progress of science, technology and social economy, the competition in the product design industry is increasingly fierce, and it is urgent for higher vocational colleges to train professional product design talents to meet the market demand [3]. Only by strengthening teaching reform and deepening school-enterprise cooperation can the economic development of our country better meet the social and market needs, so as to send more excellent talents for socialist modernization and train more highly qualified skilled product designers.

2. Current situation investigation and analysis

We have conducted an in-depth survey of the current situation of product design talent cultivation in some higher vocational colleges in the province by issuing questionnaires, conducting field research and individual interviews. In the survey of more than 30 higher vocational colleges across the country, it is found that there are many problems in the product design specialty of domestic higher vocational colleges through the survey, which are mainly manifested in the following aspects: the curriculum is lack of pertinence, and the orientation of talent training objectives is not accurate; The curriculum system is unreasonable; The practical teaching conditions are insufficient. From the survey results, employers generally hope that college graduates have the following qualities and abilities: 1. Master and be able to flexibly use new technologies, new materials and new methods; 2. Have strong ability to comprehensively use knowledge to solve problems; 3. Have strong organization and coordination ability, good psychological quality, adaptability and innovative spirit, et al.

3. Innovation path of product design professional talent training mode

3.1. Build a talent training system oriented by job demand

Higher vocational colleges should clarify the goal of talent training for product design majors and formulate corresponding talent training programs. From the requirements of vocational posts, determine the goal of talent training. Higher vocational colleges should proceed from the actual situation of the school, combine the development situation and conditions of the school, give full play to their own advantages, clear the orientation of running the school, and put forward the talent training program with their own characteristics. Higher vocational colleges should set up courses according to the trend of industrial development and social needs. With the development of society, the market competition becomes more and more fierce, and the product design industry puts forward higher requirements for the practitioners. In order to improve the competitiveness of product design industry, it is necessary to strengthen the comprehensive ability training of product design talents in skill level and professional quality. In the actual teaching, teachers should constantly improve their professional skill level and practical operation ability, and actively develop the professional teaching materials and corresponding teaching system which are required in the new period and conform to the law of the market.

3.2. Strengthen the construction of "double-qualified" teachers and practical teaching conditions

"Double qualified" teachers refer to professional teachers who can carry out both theoretical teaching and practical teaching. The training of students in higher vocational colleges is mainly based on practical knowledge. Only the "double qualified" teachers with high level can meet the teaching needs. Through investigation, it is found that there are still deficiencies in the construction of teaching staff and practical teaching conditions of product design specialty in higher vocational colleges, and there is a lack of "double-qualified" teachers who understand both the theoretical knowledge of product design and the actual production of enterprises. In order to solve this problem, first of all, we should strengthen the construction of "double-qualified" teachers, take various ways to introduce relevant professional talents from enterprises, so that they can have professional knowledge of product design as soon as possible; The second is to train and educate existing teachers to improve their theoretical level and practical ability; Finally, strengthen the construction of in-school training base and off-campus practice base. Promote the growth of "double qualified" teachers through the guidance of "double qualified" and the participation of industry enterprises.

3.3. Optimize the course structure system and pay attention to the practice link

Curriculum structure is the main link in the process of professional personnel training. The setting and optimization of curriculum structure determines the direction of professional personnel training. The curriculum system and curriculum structure is an important part of the training process of professional talents in higher vocational colleges. Therefore, it is necessary to reform the curriculum system of product design major in higher vocational colleges in view of the problems such as unreasonable setting of curriculum system, inaccurate orientation of talent training objectives and inadequate practical teaching conditions. First of all, we should define the objectives of each stage, and then determine how many hours, what content to learn and what practical links to complete in each stage. Secondly, we should determine the objectives of each stage, determine the curriculum system and content arrangement for each learning objective, so as to develop a clear teaching plan. Thirdly, to optimize the curriculum structure system to reform and innovate the specialty of product design in higher vocational colleges, we must first improve the teaching links such as market research report and work display.

The implementation effect of teaching practice of product design specialty in higher vocational colleges is an important basis for measuring the quality of talent training. At present, many higher vocational colleges do not understand and pay enough attention to the practical teaching links of product design, and do not pay enough attention to the practical teaching links in terms of curriculum setting and curriculum content. As far as product design is concerned, it has similarities with many industries in the society, but also has many differences. Many times, it needs to be done through a lot of practice to have outstanding performance in an industry. In teaching, teachers should guide students to understand the significance and value of product design; Cultivate their ability to analyze and solve problems in life; Guide students to participate in various design competitions and experience

innovative thinking and design methods during the competition. Based on this understanding, product design is integrated into students' daily life. For example, let students use their spare time to go into libraries, museums and other places to learn about various materials and production processes, and experience and understand the basic principles and structural characteristics of products; Take students to the factory for field research during the holiday.

3.3.1. Establish teaching mode and method based on professional post standards

At present, in the teaching of product design major, most colleges and universities adopt project-oriented, task-driven, process-oriented and other ways to focus on the cultivation of students' practical skills. But these teaching modes and methods lack scientific theoretical basis and effective implementation guarantee. The training of product design professionals is based on vocational post standards. In teaching, the design content runs through the whole learning process in the form of project tasks, and the cultivation of students' vocational ability and quality is realized through teaching objectives, teaching content and learning evaluation. In this process, we should not only solve the docking problem between product design course content and professional standards, but also solve the connection problem between curriculum setting, classroom teaching and practical application, but also solve the connection problem between project tasks and teaching tasks, teaching resources and learning environment.

3.3.2. Construction of "modular + project-based" practical teaching system

The practical teaching system of product design specialty should closely combine with the actual situation of the enterprise, take the project as the main line, take the students as the center, follow the professional post standards, follow the principle of work-study combination, and cultivate students' professional ability, quality and psychology. We should carry out modular design of practical teaching and organically integrate theoretical teaching content into practical teaching content. Based on the construction of modular teaching mode, the theory and practice are organically combined. First of all, develop professional skills training programs according to the needs of professional posts, and divide modules according to the needs of posts. Arrange corresponding modules in the professional curriculum system. Secondly, we should strengthen the practical training. Schools should select teachers to enterprises for temporary training and post-practice, in the process of cooperation with enterprise designers to complete practical training projects; In addition, it is also a good way to cultivate a double-qualified team of teachers. Through the project practice teaching system to strengthen the construction of product design professional practice link. Students study and think with project as the carrier. Project-based teaching is beneficial to stimulate students' interest in learning and cultivate students' ability of self-study and comprehensive application of knowledge to solve practical problems.

3.3.3. Construct the teaching content of "modularization + project-based" and integrate product design into the professional curriculum system

According to the innovative research on the cultivation mode of product design professionals in higher vocational colleges, this paper constructs the "modular+project-based" teaching content, that is, first divide the product design task into modules, each module contains several work tasks, and then divide these tasks into small tasks, each small task is designed according to the cognitive rules of students, and finally complete a complete product design process. In the "modular+project-based" teaching content, the teaching content takes the project as the carrier and arranges the teaching schedule according to the curriculum system. In addition, a special comprehensive ability training module is also set up. Cultivate students' professional quality and skills through comprehensive ability training module, and integrate product design into professional curriculum system.

In short, the innovation of talent cultivation mode for product design specialty in higher vocational colleges should adhere to the goal of cultivating high-quality skilled talents and carry out work in combination with the actual situation of higher vocational students.

3.4. Strengthen school-enterprise cooperation and create a strong educational atmosphere

Vocational product design major is a very practical major, we must pay attention to the cultivation of students' practical ability, give full play to the advantages of the integration of production and education, and realize the organic combination of teaching process and working process. School-enterprise cooperation is an important way to strengthen the construction of product design specialty. "Integration of production and education, cooperation between schools and enterprises" is an important content of the reform of modern vocational education personnel training mode. From the

perspective of school-enterprise cooperation, work can be carried out from the following aspects: first, school-enterprise co-construction curriculum; Second, teachers participate in enterprise research and practice; The third is to hire enterprise technical personnel into the classroom to teach, to cultivate the double-qualified teachers; The fourth is to participate in the enterprise research and development projects, or directly to the enterprise production line exercise, understand the enterprise's frontline demand. From the perspective of talent cultivation mode, the innovation of talent cultivation mode of product design specialty should follow the principle of "joint construction of schools and enterprises, dual sports talents, and combination of work and learning". Specifically, it is necessary to rely on the advantageous resources of both schools and enterprises in terms of school conditions, teachers, teaching facilities, technical services and other aspects to carry out cooperation, so that students can complete the internship and training tasks during school.

3.5. Establish a product design studio to deepen the integration of production and education

Integration of production and education refers to a series of deep integration between higher vocational colleges and enterprises in personnel training, education and teaching, science and technology research and development. In the process of talent training of product design specialty in higher vocational colleges, school-enterprise cooperation is an important means to improve the quality of product design specialty education. School-enterprise cooperation can not only improve students' professional skills, but also help enterprises solve product design problems and achieve a win-win situation. Building a studio is one of the most effective ways to deepen the integration of industry and education. Through the establishment of product design studio, on the one hand, it can ensure that students majoring in product design have a good practice environment and atmosphere, and promote the development of students towards professionalism. On the other hand, it can improve students' practical ability and innovation ability and solve practical problems of enterprises. The studio plays a positive role in cultivating students' practical ability, especially for the product design major in higher vocational colleges, which can provide enterprises with a large number of high-quality technical skills, and thus improve the competitiveness of enterprises.

3.6. Improve the student vocational skill appraisal system and establish the quality assurance system

According to the training objectives of product design professionals and the job positions and skill requirements that students are qualified for after graduation, the curriculum setting and teaching content of product design majors should be reformed. While ensuring that students master relevant basic knowledge, students should also be given specific training according to their vocational needs, so as to promote the realization of the training objectives of product design professionals. Therefore, higher vocational colleges can combine the actual situation, establish a vocational skills appraisal system suitable for the post needs of higher vocational students, and organize students to conduct vocational skills training and assessment activities before graduation. To ensure that students through the examination can obtain the corresponding certificate. In combination with the actual situation, improve the teaching quality monitoring system and guarantee mechanism of product design specialty, and form a three-level education and teaching management network with teachers, experts, and enterprise technicians as the main body. In the teaching process of product design specialty, it is necessary to establish a perfect system combining practice training system with vocational qualification certificate system. Through the establishment of curriculum assessment standards, students are evaluated objectively. Finally, it is necessary to do a good job in the preservation of relevant data and documents and the construction of systems, so as to provide favorable conditions and guarantee for the cultivation of product design professionals, and enable students to be competent in the skills and knowledge required for product design, production and sales after graduation.

4. Conclusion

At present, our country is in a critical period of economic structure transformation and industrial structure adjustment, so it is necessary to vigorously develop highly skilled talents, especially a large number of highly qualified design talents. The innovation of talent training mode for product design specialty in higher vocational colleges is a systematic project, involving many aspects, including talent training objectives, talent training mode, curriculum system construction and so on. In view of the above problems, this paper studies the innovation path of talent training mode of product design major in higher vocational colleges, in order to provide a new model reference for talent training, hoping to

improve the quality of product design professional talent training in higher vocational colleges.

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