

Teaching Reform and Practice of Product Design Based on Integration of Industry, School, Research and Innovation and Combination of Agriculture and Industry

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Abstract: *The society has high requirements for product design professionals. In addition to mastering theoretical knowledge, they should also have high moral quality. There is a great demand for innovative and applied talents. This paper briefly summarizes the connotation of the integration of industry, school, research and innovation and the combination of agriculture and industry, and makes a simple analysis of the current situation of product design teaching, in order to further puts forward the reform and practice strategy of product design teaching based on the integration of industry, school, research and innovation and the combination of agriculture and industry, and initially explores the training path of application-oriented talents in product design.*

Keywords: *Integration of Industry, University, Research and Innovation, Combination of Agriculture and Industry, Product Design Teaching, Reform and Practice*

1. Introduction

The integration of industry, school and research is the cooperation of industry, schools and scientific research institutions, which can give full play to its own advantages, and create an advanced development system integrating research, development and processing. Based on the problems of curriculum disjointed and theory and practice disjointed in product design teaching, the integration of industry, university, research and innovation and the combination of agriculture and industry can improve this problem to a certain extent and accelerate the transformation of innovative and applied talents training mode.[1] The university can scientifically formulate a new mode of combining industry, school, research and innovation with agriculture and industry for students and local characteristic enterprises, make use of the integration advantages of industry, schools, scientific research institutions and innovation, combine agriculture and industry, strengthen the transformation of practical teaching mode, and deepen the application-oriented talent training system at multiple levels.

2. Connotation of integration of industry, school, research and innovation and combination of agriculture and Industry

2.1. Integration of industry, school, research and innovation

Industry is an industry, school is university, and research is a scientific research institution. The integration of industry, school, research and innovation is a kind of integration, cross-border, integrated and symbiotic education. The traditional integrated education refers to the educational activities under special education to improve the probability of disabled students participating in school learning and community activities. Under the background of integration of industry, school, research and innovation, it has gradually evolved into a school running form that uses industry and technology to enrich teaching activities. The cross-border thinking is rich in openness and innovation, thinking about the essence of education from multiple levels, exploring new ways of education, in order to realize cross industry knowledge integration and innovative development. Integration usually refers to the unified integration of multiple different things and behaviors, and the use of practice as a means to explore the best cross-border way for substances with similar connotations, attributes and characteristics. The essential purpose of the integration of industry, school, research and innovation is to solve the problems of insufficient

scientific research funds, students' lack of practical simulation teaching and employment difficulties, so as to promote the common development of universities, enterprises and scientific research institutions, and promote the transformation of innovation achievements of colleges and universities.[2]

2.2. Integration of industry, school, research and innovation and combination of agriculture and industry

In essence, the combination of agriculture and industry is the combination of agriculture and industry. The use of industry to increase agricultural added value and generate high returns is the strict requirement and necessary result of the development of productive forces. Under the background of integration of industry, school, research and innovation, the combination of agriculture and industry has been given new content. With the strengthened cooperation of enterprises, schools and scientific research institutions, the development of industry and agriculture has ushered in a new era. The university can carry out relevant majors according to industry and agriculture, build relevant scientific research institutions based on the majors, and develop scientific research projects, in order to promote the development of scientific and technological enterprises. The enterprise can also provide the school with practice bases to improve the professionalism and practicality of college students, and cultivate high-quality talents that meet the requirements of enterprise development, so as to improve the employment rate and conversion rate of graduates, and further promote social and economic development.

3. Exploration on the university talent training mode based on the integration of industry, university, research and innovation

At the present stage, colleges and universities mainly focus on cultivating innovative and application-oriented talents. Through the theoretical knowledge teaching and practical skills training of students of various majors, students can effectively improve their professional skills and comprehensive quality. The talent training mode of universities under the integration of industry, university, research and innovation is based on the integration theory, cross-border theory, integration theory and symbiosis theory, promotes the integration of various teaching resources, accelerates the process of talent training at the present stage, and improves students' social adaptability [3]. Fusion theory initially brave special students into the normal school education, community environment and activities of education, this stage gradually developed into modern information technology and humanistic spirit highly integrated education concept, emphasis in the school education for its talent training goals, student management method and education teaching content method to rethink, explore new teaching mode. Cross-border theory with its open teaching as the main characteristics, found from the perspective of multidimensional school education and other industry knowledge, break the traditional curing thinking, emphasize teaching fusion innovation, speed up the school education edge innovation, school education, family, society, enterprises, scientific research institutions of cross-border integration, promote the development of students' comprehensive literacy. Integration theory mainly refers to the integration of two or more things with different behavioral characteristics and phenomena, which is similar to the crossover theory. Integration theory emphasizes promoting the integration of things with personal subjective initiative and pays more attention to practice. Symbiosis theory emphasizes the whole, coexistence and openness, which is in line with the current people-oriented concept and situational teaching principles, and can effectively improve the effect of school education and accelerate the cultivation of students' comprehensive literacy.

4. Analysis on the current situation of product design teaching

4.1. Product design teaching course is out of line

At present, the product design major in colleges and universities has the problem of teaching curriculum disconnection, which is specifically manifested as follows: the discipline knowledge arrangement mostly follows the principle of top-down, from shallow to deep, and divides the curriculum in a "three-stage" manner, so as to promote the students to master the product design concept, basic knowledge and relevant laws. However, in the actual teaching, there is still a phenomenon that the teaching curriculum is disconnected, which leads to the students' incomplete grasp of knowledge, poor consistency of theoretical application, difficulty in forming a systematic knowledge structure, and is not conducive to the development of innovation ability. In addition, there are some problems in arranging professional courses to broaden knowledge. Compared with other disciplines, the product design

specialty has a wider range of design knowledge. It is easy to limit the development of students' practical ability and innovative ability by teaching only with professional knowledge, resulting in the limitation of students' thinking.

4.2. Disjunction between product design theory and practice teaching

Product design teaching cannot be separated from practical training, which requires students to flexibly use theoretical knowledge to carry out practical activities and strengthen the transformation of book knowledge. However, there is often a lack of practical teaching in teaching, which seriously hinders the future development of students. At present, some colleges and universities have gradually realized the importance of practice to product design teaching, but their practice teaching is highly trial and error. Due to the selection of practice projects and the way of development, it is difficult for students to flexibly use theoretical knowledge to solve problems in practice, and the innovative thinking mode and practice effect are greatly discounted. In addition, after completing their studies and taking part in work, due to their incomplete understanding of the post demand and market demand, the students are less competitive in their work and are not competent for the post.

5. Teaching reform and practice of product design based on integration of industry, school, research and innovation and combination of agriculture and Industry

5.1. Improving the importance of the school and clarifying the training objectives of talents in the new era

In combination with the current development requirements of our country and based on the background of integration of industry, school, research and innovation and combination of agriculture and industry, it is clear that the training objectives of talents in the new era are to adhere to the training of application-oriented, innovative and compound talents, promote the comprehensive development of students' morality, intelligence, physique, art and labor, and strengthen the professional development of students, in order to cultivate their innovative and practical abilities, and promote their social competitiveness based on mastering basic knowledge and solving problems in practice.

5.2. Scientifically formulating a new mode of education and speeding up the process of teaching reform

In order to speed up the output of product design professionals, the university needs to scientifically formulate a new mode of combining production, study, research and innovation with the combination of agriculture and industry to speed up the process of teaching reform. Based on the development needs of enterprises, agriculture and industry, the school can carry out professional teaching according to students' interests and market demands to improve students' mastery of theoretical knowledge, and organize practical activities on this basis to help students learn quickly. At the same time, we can make use of the advantages of school enterprise cooperation to increase the opportunities for students to practice in enterprises, understand the industry trends in advance, cultivate students' theoretical guidance and practice ability, and enhance their initiative in learning to lay a foundation for future work. In addition, we can organize students to carry out product design teaching in different aspects through small classes, and carry out targeted teaching for students at different stages. Those with strong ability can be encouraged to continue their studies, give play to their own advantages, and promote the comprehensive development of students.

5.3. Strengthening the integration of course teaching and enterprises to promote the professional development of practice

Under the background of integration of industry, school, research and innovation, enterprises can provide students with theoretical and practical training opportunities to promote the professional development of students. Schools can also form a scientific talent training mode according to the needs of enterprises or the market to create innovative and applied talents, so as to further promote the industrial technological innovation development and achievement transformation and promote the development of productivity. In practical teaching, the school can arrange relevant tasks according to the needs of enterprises and organize students to participate in practice. The content can involve product design, product research and development, team management, etc., to promote the comprehensive development

of students. In this process, students can be guided to express their ideas, summarize the existing problems, carry out targeted teaching according to the practice process of students, tap the potential of students, help students quickly form a career orientation, and cultivate students' innovation ability, coordination ability and management ability. In addition, students can also help enterprises solve relevant problems through enterprise practice activities, put forward innovative opinions, provide theoretical guidance, and help enterprises achieve technological innovation and achieve win-win results.[4]

5.4. Joint enterprises establish product design and scientific research bases to promote the development of scientific research

Under the background of integration of industry, school, research and innovation, the university can establish a product design and scientific research base with enterprises to promote the development of relevant scientific research work and improve the conversion rate of scientific research achievements. The scientific research base is jointly managed by both parties. The management rules and operation methods are formulated, and the management and assessment mechanism is improved to ensure the smooth development of school enterprise cooperation. Among them, the university is mainly responsible for the training of professional personnel, providing a theoretical basis for the development of scientific research; While enterprises provide capital equipment and a platform for students to practice, formulate research projects according to market demand, promote the innovative development of schools, enterprises and scientific research, and realize resource sharing. In this process, regular meetings on talent training, market demand and industry dynamic analysis can be held to scientifically formulate talent training plans, promote the process of scientific research projects and promote the transformation of scientific research achievements.

5.5. Strengthening the transformation of practical teaching mode and deepening the training system of applied talents at multiple levels

Product design teaching focuses on the training of application-oriented talents and promotes the improvement of students' theoretical guidance and practical ability. In addition to the existing practice mode, school enterprise cooperation should also be interspersed in classroom teaching, strengthen the transformation of practical teaching mode, and deepen the training system of application-oriented talents at multiple levels. Specifically, we can hire the backbone of enterprise product design as the practice teacher of professional elective courses, change the traditional teaching mode, carry out teaching with the personal experience of enterprise staff, and give full play to the advantages of practical courses; Or we should invite industry experts to share industry trends and industry development in the form of lectures to help students understand the needs of product design posts, help students complete their career positioning, guide students to strengthen their learning and promote their development.

6. Conclusion

With the continuous deepening and development of the combination of industry, school, research and innovation and agriculture and industry, the reform of product design teaching has entered the current stage. By integrating the relevant resources of schools, enterprises and scientific research institutions, assisted by the combination of agriculture and industry, the new trend of teaching development is promoted, and the application-oriented talent training system is deepened at multiple levels.

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