Research On Cross-Professional Cooperative Training Mode of Intelligent Toy Design and Development Talents

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Abstract: Intelligent toy design and development talents need to master certain electronic intelligent control, arts and crafts design, product modeling design and other skills. There is a shortage of intelligent toy designers in our country, and toy enterprises are in urgent need of professional and technical personnel engaged in toy product modeling and functional design. Therefore, it is urgent to cultivate intelligent toy design and development talents. This paper explores the necessity of cross-professional training of intelligent toy design and development talents, relies on teachers' scientific research and enterprise projects, etc., takes graduation projects as a breakthrough, pushes back the talent training curriculum system, and proposes an cross-professional collaborative training model. Through cross-professional combination training intelligent toy design talents, so that they have the design thinking of toy designers and a certain degree of electronic engineer design thinking, can better adapt to the rapid development of modern toy design industry, enterprises changing new requirements.

Keywords: Talent Cultivation; Cross-Professional Training; Output-Oriented; Collaborative Culture

Introduction

With the gradual penetration of intelligent technologies such as WiFi networking and AI voice interaction into the market, the domestic toy industry is currently experiencing great changes. At present, China is the world's largest toy producing country, among which there is a large demand for intelligent toy design talents. The cultivation of intelligent toy design and development talents is not only affected by the economic development and the internationalization of higher education, but also faces the challenge of technological development and technological revolution. The society and enterprises also have a rising demand for the quality of talent training. They are required to have a solid theoretical foundation, and they need to master the skills of product modeling design and arts and crafts design, as well as a certain understanding of electronic intelligent control. At the same time, they should have strong learning, research and innovation ability, and be able to constantly update and lifelong learning. In the training process of intelligent toy design and development talents, guided by the realization of intelligent toy products, the design of intelligent toys is closely combined with the cross-professional training of Industrial design, Electronic information engineering, Internet of Things engineering and other majors, so as to cultivate multi-dimensional, diversified, inclusive and open new engineering talents, so as to better meet the needs of enterprises for such talents.

1. Current situation of cross-professional collaborative talent training mode

According to the 2018 Global Graduate Employability Rankings, a survey of employers around the world found that 71 percent of employers believe universities should strengthen their ability to develop students' interdisciplinary skills and use problem-based learning.

In 2010,The Guangzhou Academy of Fine Arts[4] Starting from undergraduate graduation project, I adopted interdisciplinary integration training mode, in which the robot designed to automatically deliver gifts integrated the knowledge of industrial design, automatic control, mechanical design and other disciplines.In 2016,Quzhou Vocational and Technical College[5] try to integrate the curriculum system of computer major and art design major, set up the "cross-specialty joint training" project, and build the cross-specialty curriculum system.

Since 2009, Guangdong University of Technology[6] cross-professional joint training with Guangzhou Aircraft Maintenance Engineering Co., LTD., Guangzhou National IC Base, Synopsys, Cadences and other enterprises has been carried out successively. Different talent training programs have been set for the joint training students. School of Art, Pearl River College, Tianjin University of Finance and Economics[7].In the major of design, we carry out interdisciplinary integration teaching practice from internal and external majors. Shanghai University of Engineering Science combines exploration studio project with practical teaching to cultivate creative costume design talents, enabling students to improve their professional knowledge and skills in the process of solving practical problems[8]. Hanzhou Electronic Science and Technology University[9] integrating art, engineering and culture to carry out reform and practice of maker education curriculum.In the process of completing maker works, students from multiple majors have exercised their cooperation ability and team spirit, and their various abilities have been greatly improved.

To sum up, most colleges and universities have started from the aspects of talent training program, graduation design practice, curriculum reform, cross-professional cooperation talent training, and explore the output-oriented training mode and teaching mode.

2. Intelligent toy design and development talent cross-professional cooperation training mode

Modern toys have entered the era of intelligent toys, enterprises are calling for intelligent toy design and development talents who can design a cool creative shape and intelligent function. Relying on teachers' scientific research, enterprise projects, etc., taking graduation project as a breakthrough, the output-oriented cross-professional talent training mode focuses on students' actual output ability and comprehensive ability, and cultivates talents closer to the needs of enterprises.

2.1 Taking graduation project as the breakthrough point, carry out cross -specialty comprehensive graduation project training practice

The topic selection of graduation project is composed of enterprise cooperation and funding projects, themed design projects, professional competition design projects and comprehensive interdisciplinary projects. Students will set up teams across different majors and give full play to their professional advantages, such as the product hardware and software development ability of electronic information majors and the product creative design ability of design majors. Through team collaboration, the design meets the functional requirements of the work, while maintaining creativity to improve the design, development and implementation of the function. Put students in a real design environment, and cultivate students' ability to transform abstract design concepts into objects.

In the process of project implementation, the instructor team can employ front-line designers and engineers with rich practical experience as part-time professors through the school-enterprise cooperation platform, and participate in the project teaching work of students by conducting lectures, on-site team guidance, remote guidance and other modes. Design trends as well as project development and engineering practice methods and skills are effectively imparted to students.

2.2 The new teaching mode of cross-professional integration of production and teaching, cultivating innovative thinking and innovative spirit

Reform the existing teaching system, teaching methods, means and traditional class teaching mode, integrate teaching resources, research on the new teaching mode of intelligent toys cross-professional application talent training curriculum. With toy objects as the target, it runs through the theoretical connection of the freshman and sophomore years of teaching, the project cases of the transformation of scientific research achievements in the junior and senior years, and the enterprise project cases. With the project as the center, it puts students in the actual project development scene, guides students to carry out independent and exploratory learning, cultivates innovative thinking and innovative spirit, and takes into account the improvement of students' diversified professional abilities. Continuous improvement of new engineering professional quality and promotion of professional skills in the teaching mode

of integration of production and education and integration of work and study.

2.3 Production-oriented, relying on competition projects, improve students' comprehensive ability

"Outcome Based Education" (OBE) is an education "system" that focuses on ability cultivation: it has a relatively complete set of design, implementation, evaluation and evaluation concepts around the improvement and realization of training objectives. From graduation design, curriculum design, project mining quality works, relying on the discipline professional competition platform, build a cross-professional cooperation team, improve the comprehensive strength of students, team spirit. Through competition, students are encouraged to have a sense of fighting, a sense of collaboration, and the ability to complete and display works within a limited time cycle. It strengthens the cultivation of students' behavioral ability, integrates general ability into professional education, and organically combines in-class, extracurricular and social practice into a whole cultivation. Adhere to the student-centered, closely combined with professional certification requirements.

3. Conclusion

To sum up, intelligent toy design and development talents trained by cross-professional collaboration can better meet the needs of enterprises and employers. We will closely combine the training of electronic product engineers and intelligent toy designers. Relying on enterprise projects, teachers' scientific research and graduation design, we will improve engineers' design ability, engineering ability and innovation ability, strengthen the relationship between toy electronic design and toy appearance design, strengthen the reform of relevant personnel training mode, and promote the sustainable development of intelligent toy industry. Improve the intelligent level of toy design, cultivate more suitable for enterprises, to serve the development of regional economy.

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