

# Teaching reform strategy of product design major for the integrated development of industry and education under the perspective of rural revitalization

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**Abstract:** *This paper takes the integrated development of industry and education under the perspective of rural revitalization as the background, and takes the teaching reform of product design major as the theme, aiming to explore how to promote the integrated development of industry and education through teaching reform strategies. The paper first analyzes the background and objectives of the rural revitalization strategy, as well as the concept and significance of the integration of industry and education. The characteristics and challenges of product design teaching are studied, and the existing teaching models are pointed out. The corresponding teaching reform strategies are proposed from the adjustment and optimization of teaching content, the innovation and improvement of teaching methods, the construction and training of teachers, and the expansion and deepening of practice links. Through the research of the paper, the significance and influence of the integrated development of industry and education on the teaching of product design are obtained, which provides reference and reference for promoting rural revitalization and cultivating high-quality talents.*

**Keywords:** *rural revitalization, integration of industry and education, product design major, teaching reform, teaching strategy*

## 1. Introduction

As an important strategy for China's development, the rural revitalization strategy has put forward new requirements for the integrated development of industry and education. In this context, the product design major, as the training field of innovative talents, is facing the challenge of how to better combine it with rural revitalization. This paper aims to discuss the teaching reform strategy of product design major for the integrated development of industry and education under the perspective of rural revitalization. By adjusting teaching content, innovating teaching methods, training teachers and deepening practical links, it can inject new vitality into the professional education of product design, promote the cultivation of students' innovative thinking and practical ability, and provide strong support for the implementation of rural revitalization strategy.

## 2. Integrated development of industry and education under the perspective of rural revitalization

### 2.1. Background and objectives of the rural revitalization strategy

In the new stage of China's economic and social development, the rural revitalization strategy has been put forward and incorporated into the national development plan. The background of this strategy is the imbalance between urban and rural development and the accumulation of structural contradictions and problems facing agriculture and rural areas. Rural revitalization aims to achieve comprehensive agricultural and rural development and the integration of urban and rural areas by deepening rural reform, promoting agricultural modernization, promoting the transformation and upgrading of rural industries, and enhancing the sense of gain and happiness of farmers[1].

The goal of the rural revitalization strategy is to build beautiful villages, rich farmers, livable villages and happy farmers. Specifically, the goals include improving the level of rural infrastructure, promoting innovation in agricultural science and technology, promoting the development of rural industries, improving the rural public service system, ensuring the growth of farmers' income and social security, and promoting the protection and improvement of the rural ecological environment.

The background and goal of the rural revitalization strategy provide an important opportunity and

demand for the integrated development of industry and education. The integration of industry and education is the organic combination of industry and education, aiming to enhance the industrial competitiveness and the quality of talent training. In the rural revitalization strategy, the integrated development of industry and education has become an important path to realize the rural industrial upgrading and talent training, which can inject new vitality into the transformation and development of the rural economy.

The background and goal of the rural revitalization strategy make the integrated development of industry and education become an urgent task in the field of industry and education. By closely combining industrial demand with education and training, the technical content and innovation ability of rural industry can be improved, high-quality talents can be cultivated to meet the needs of rural development, and the sustainable development of rural economy can be promoted, so as to realize the goal of rural revitalization strategy[2].

### ***2.2. The concept and significance of the integration of production and education***

The integration of industry and education refers to the mechanism and mode of establishing close connection and cooperation between the industry and education circles. By closely combining industrial demand and education training, it realizes the mutual benefit and win-win situation between industry and education, and promotes the virtuous cycle of industrial development and talent training. It emphasizes the close integration of industry and education, that is, the joint participation and cooperation of both the industry and education circles. The integration of industry and education focuses on the connection between industrial needs and education training, that is, through in-depth understanding of the needs and trends of the industry, adjust the content and methods of education training, to cultivate talents that meet the needs of industrial development. The integration of industry and education pays attention to the organic combination of industry, university, research and application, and brings the application of scientific research results to the industry to promote the innovation and progress of industrial technology. The integration of industry and education is of great significance in the rural revitalization strategy. Rural revitalization needs the support of talents with innovation ability and practical ability, and the integration of industry and education is an effective way to cultivate such talents. Through the organic combination of education and industrial demand, high-quality talents can be cultivated to meet the needs of rural industry development, and the technical content and innovation ability of rural industry can be improved. Integration of industry and education can promote the transformation and upgrading of rural industries. Through cooperation with the industry, the education community can timely understand the development trend and needs of the industry, adjust the teaching content and methods, and cultivate talents to adapt to the upgrading of rural industries. This is helpful to promote the structural adjustment and innovative development of rural industry, and improve the competitiveness and sustainable development ability of rural economy. The integration of industry and education can also promote the optimal allocation of human resources in rural areas. Through cooperation with the industry, the education community can better understand the needs of human resources in rural areas, carry out targeted training and education, improve the quality of the labor force and employability in rural areas, and promote the increase of farmers' income and employment opportunities[3].

### ***2.3. The relationship between rural revitalization and the integration of industry and education***

Rural revitalization needs the integration of industry and education to enhance the technical level and innovation ability of rural industrial development. Through the integration of industry and education, the education sector can closely combine the needs of the industry and provide talents with practical experience and professional knowledge for rural industries. Such talents can lead and promote the development of rural industry to the direction of high technology and high added value, improve product quality and competitiveness, and realize the sustainable growth of rural economy.

The integration of industry and education has provided an important talent support for rural revitalization. Rural revitalization needs a large number of professionals to promote the development of rural industries, improve rural infrastructure, and enhance the level of rural governance. Through the integration of industry and education, the education sector can adjust the specialty setting and optimize the course content according to the actual needs of rural revitalization, cultivate diversified and compound talents to meet the needs of rural revitalization, and meet the needs of talents of the rural revitalization strategy. The rural revitalization strategy provides a broad platform for practice and provides more cooperation opportunities for the integration of industry and education. By cooperating

with rural revitalization projects, rural enterprises and farmers' cooperatives, the education community can carry out practical teaching, practice training and scientific research cooperation, so that students can deeply understand the actual situation in rural areas, master practical operation skills, and provide professional technical support and talent reserve for rural revitalization[4].

### **3. Teaching status and problems of product design major**

#### ***3.1. Characteristics and challenges of teaching in product design major***

Product design professional teaching has the following characteristics. Product design is a comprehensive discipline, involving the knowledge and skills of art, engineering, material science and other disciplines. Its teaching content needs the comprehensive use of the theory and practice of various disciplines to cultivate students' innovative thinking and practical operation ability. Product design teaching pays attention to the cultivation of practical ability and practical ability, and emphasizes the improvement of students' practical operation and creative ability. Students need to exercise their design and practice ability through project practice, laboratory practical training and other activities. Product design teaching needs to be closely connected with the industry, keep up with the development trend and demand of the industry, and cultivate high-quality talents to meet the market demand.

Teaching the product design major also faces some challenges. The shortage of teaching resources is a problem. Product design needs a rich practice environment, advanced design tools and equipment, but the practice conditions and equipment level of some schools are relatively limited, unable to meet the practice needs of students. The structure and level of the faculty is also a challenge. The field of product design requires teachers with rich practical experience and innovative ability, but some schools lack such high-level teachers, which leads to limited teaching quality and effect. The weakness of industry-university-research cooperation is also a problem. The degree of contact and cooperation between schools and industries is not high, which cannot provide students with more practice opportunities and employment security[5].

#### ***3.2. Problems existing in the existing teaching mode***

The disconnection between the teaching content and the needs of the industry. Due to the rapid development of the industry and the constantly changing market demand, the existing teaching content often fails to keep up with the trend in time. Some schools lag in curriculum to cover the latest design concepts, technologies and tools, resulting in students facing employment difficulties or unable to meet industry requirements after graduation.

The teaching methods are lack of diversity and practicality. The traditional teaching mode mainly focuses on classroom teaching and lacks practical teaching links. Students have few cases and projects in class, making it difficult to cultivate practical operation ability and innovative thinking. The lack of practical opportunities also leads to students' understanding of product design at the theoretical level and lack of practical application experience. The evaluation system is not scientific and comprehensive enough. The traditional assessment method mainly focuses on examination and work display, paying too much attention to students' theoretical knowledge and finished works, while ignoring the cultivation of students' design thinking, teamwork and innovation ability. This evaluation method can not comprehensively measure students' comprehensive quality and practical ability, which affects the improvement of teaching quality.

#### ***3.3. Reasons and motives for needing reform***

The change of market demand requires the product design professional teaching to keep pace with The Times. With the rapid development of science and technology and the diversification of consumer demand, the product design industry is showing rapid changes. The traditional teaching mode cannot keep up with the development trend and demand of the industry in time, so it is necessary to reform the teaching content and methods, introduce the latest design concepts, technologies and tools, and cultivate high-quality talents to meet the market demand.

The cultivation of practical ability is an important motivation for the teaching reform of product design major. The traditional teaching mode pays too much attention to the indoctrination of theoretical knowledge, and ignores the cultivation of students' practical ability. Product design is a strong practical subject, which requires students to have good practical operation and creative ability. Reforming the

teaching mode, paying attention to practical teaching, and increasing the project practice, laboratory practice and practice opportunities, can improve the students' practical ability, so that they can skillfully use the knowledge learned to solve practical problems. Close cooperation with the industry is an important driving force for the reform. The product design industry is an industry closely related to the market, and the cooperative relationship between schools and industries is crucial to the improvement of teaching quality. Strengthening the cooperation with enterprises and industries, carrying out industry-university-research cooperation projects, providing practical opportunities and employment security, can make the teaching closer to the actual needs, and cultivate high-quality talents who are closely integrated with the industry.

#### **4. Teaching reform strategy of integrated development of industry and education**

##### ***4.1. Adjustment and optimization of teaching content***

In order to adapt to the changes of industrial development and market demand, the teaching content of product design major needs to be adjusted and optimized. Here are some specific strategies and measures:

Update of the curriculum. Introduce new design concepts, tools and technologies for the latest industry trends and technologies. For example, courses related to digital design, virtual reality, and human-computer interaction can be added to cultivate students' ability to understand and apply new technologies.

Strengthen practice projects. By developing real project practice, students can face real design problems and challenges. Students can participate in design competitions, industry cooperation projects or social practice activities to enhance their practical ability and innovative thinking. Such practice projects can allow students to better understand the whole process of product design and develop their teamwork and problem-solving skills. Focus on interdisciplinary integration. Product design involves many disciplines, including engineering, aesthetics, materials science and so on. The teaching content should break through the subject barriers and promote the communication and integration between different disciplines. For example, engineering knowledge, psychology principles, marketing and other related disciplines can be introduced to cultivate students' comprehensive literacy and interdisciplinary thinking ability.

##### ***4.2. Innovation and improvement of teaching methods***

In order to improve the teaching quality of product design major and the learning effect of students, the innovation and improvement of teaching methods are very important. Here are several effective strategies and measures:

Pay attention to practical teaching. Traditional classroom teaching is often based on theoretical knowledge and lacks of practical operation opportunities. Through practical teaching, students can be placed in a real design environment, and let them personally participate in the design activities. For example, activities such as workshops, laboratory training and field trips are organized to allow students to master design skills and problem-solving skills through practical operation and experience.

Advocate for project-driven learning. Organize students into groups to collaborate and learn in actual projects through project-driven learning. Each team is responsible for completing a complete design project, covering the whole process from requirements analysis to concept design to product production. This learning style can cultivate students' teamwork, problem solving and project management skills.

Introducing teaching methods supported by information technology. Using information technology tools and software, we can provide more abundant and diversified teaching resources. For example, using virtual reality technology, students can simulate the design environment and conduct virtual design and testing. Use the online learning platform and resource database to let students learn and explore independently, and improve the flexibility and personalization of learning.

##### ***4.3. Construction and training of the teaching staff***

In order to meet the needs of the integrated development of industry and education, the product design major needs to pay attention to the construction and training of teachers, and improve the

professional quality and teaching ability of teachers. Here are some specific strategies and measures:

Introduce excellent professional talents. The school can actively establish cooperative relations with the industry to attract professionals with rich practical experience and professional knowledge to join the teaching team. These professionals can enrich the team of teachers, provide students with the latest knowledge and practical experience in the industry, and the connection with the industry can also promote the close connection between teaching content and actual needs.

Strengthen teachers' professional development and academic research. The school can provide relevant training opportunities and academic exchange platforms for teachers to constantly update their professional knowledge and teaching methods. Teachers are encouraged to participate in the writing of industry research projects and academic papers to improve their academic level and research ability and further improve the quality of teaching.

Establish a good teacher-student relationship and interaction mechanism. Schools can encourage teachers to establish a good teacher-student relationship with students, and help students solve problems in learning and career development through regular academic guidance and communication activities. A tutorial system can be set up to assign special tutors to students to guide their study and project practice.

#### ***4.4. Expansion and deepening of practical links***

Practice link is a crucial part of the teaching of product design major, which can cultivate students' practical operation ability, innovative consciousness and problem-solving ability. In order to further expand and deepen the practice link, the following are some effective strategies and measures:

Establish close cooperation with the industry. The school can establish long-term cooperative relations with relevant enterprises, design agencies, innovation incubation bases, etc., to provide students with opportunities for practice and participation in practical projects. Through cooperation with the industry, students are exposed to real market demands and design challenges to improve their practical ability and professionalism.

Strengthen social practice and practice links. Schools can organize students to participate in social practice activities, such as visiting enterprises and visiting design exhibitions, so that students can personally experience the development of the industry and design practice. Actively cooperate with enterprises to provide internship opportunities for students to learn and use their knowledge in practical work.

Create diversified practice platforms and projects. The school can build laboratories, maker Spaces, exhibition centers and other practical platforms to provide places for students to carry out practical operations and innovative experiments. Carry out a variety of practical projects, such as product design competition, entrepreneurial practice, etc., so that students can use what they have learned in specific projects, and obtain practical results.

## **5. Conclusions**

The integrated development of industry and education is of great significance to the teaching reform of product design major. By analyzing the integrated development of industry and education under the perspective of rural revitalization and the teaching status and problems of product design major, this paper puts forward the corresponding teaching reform strategies. These strategies include adjusting and optimizing teaching content, innovating and improving teaching methods, building and training teaching staff, and expanding and deepening practical links. Through these reform strategies, students' comprehensive quality can be promoted, cultivate innovation ability and practical ability, and provide excellent talent support for rural revitalization and industrial development. The teaching reform of integrating industry and education requires the joint efforts of schools, teachers and students to jointly promote the professional education of product design to a higher level and make positive contributions to the implementation of China's rural revitalization strategy.

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