

# Research on the Dual-Creation Talent Training Model of New Energy Automobile Based on Virtual Simulation

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**Abstract:** At present, as China vigorously develops new energy automobiles, the social demand for related talents has increased significantly, so the relevant institutions need to optimize and adjust the talent training mode to help the development of new energy automobiles. This paper summarizes the existing problems of China's new energy automobile talent training mode, and analyzes the significance of the virtual simulation-based dual-creation talent training mode of new energy automobile and its specific implementation strategies, in order to provide references for the relevant personnel.

**Keywords:** Virtual simulation; New energy automobile; Dual-creation; Talent training

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## 1. Introduction

Environmental pollution and energy supply problems can have a more serious adverse impact on China's economic and social development. The relevant state departments have actively promoted the development of a new energy automobile industry, in order to drive the adjustment of the energy strategy and promote the transformation and upgrading of the automobile industry. In the process of the development of the new energy automobile industry, it is necessary to continuously increase the support for the research and development of core technology, and optimize the talent training mode to enhance the independent innovation ability. The virtual simulation-based new energy automobile dual-creative talent training mode can effectively solve the problems of the traditional talent training mode, enhance the theoretical and practical skills of students, and then provide sufficient talent support for the development of new energy automobiles.

## 2. Existing problems of China's new energy automobile talent training mode

China's new energy automobile development time is relatively short and there are many problems in the talent training mode. Firstly, engineering practical teaching accounts for a relatively low percentage. At present, some

colleges and universities have problems with unreasonable curriculum settings in the process of cultivating new energy automobile talents. The proportion of engineering practical teaching is relatively low, resulting in students' low practical skills and being unable to meet the enterprises' needs for talents <sup>[1]</sup>. Secondly, the hardware facilities for engineering practical teaching are insufficient. New energy automobile-related technical equipment is expensive and difficult to build, transport, and dismantle. Some institutions have limited funds and other objective factors and are not equipped with adequate hardware facilities for engineering practical teaching, which in turn affects the overall quality of practical teaching and can hinder the growth and development of students. Thirdly, the talent cultivation mode of industry-education integration has a poor practical effect. Some institutions adopt the mode of industry-education integration to cultivate new energy automobile dual-creative talents. Still, in the process of practice, the number of senior engineers and senior research and development personnel invested by enterprises is insufficient, the teaching program formulated by the institutions is imperfect, and the evaluation mechanism of the talent cultivation mode is unreasonable, which affects the effect of talent cultivation <sup>[2]</sup>.

### **3. Significance of virtual simulation-based new energy automobile dual-creation talent training mode**

The significance of the virtual simulation-based dual-creative talent training model for new energy automobile is mainly reflected in the following aspects. Firstly, the integration of virtual simulation in the teaching process of new energy automobile can reduce the cost of experiments, shorten the experimental cycle, and enhance students' ability to combine theory with practice, and then achieve the requirements of informatization, intelligence, and flexibility of talent training <sup>[3]</sup>. Secondly, the implementation of the virtual simulation project can improve the flexibility and effectiveness of new energy automobile professional teaching, solve the contradiction between theory and practical teaching, teaching methods, and evaluation methods, expand the scope and intensity of experimental teaching, and improve the quality of experimental teaching <sup>[4]</sup>. Thirdly, the use of virtual simulation technology can reduce the cost of training new energy automobile professionals, provide convenient conditions for the expansion of equipment to ensure the safety and effectiveness of practical teaching, and promote the improvement of students' comprehensive quality.

## **4. Implementation strategies of new energy automobile dual-creation talent training mode based on virtual simulation**

### **4.1. Vigorously strengthening the professional teacher team construction**

The virtual simulation of new energy automobile dual-creative talent training mode has high requirements for the comprehensive quality of teachers. Thus, the relevant institutions need to vigorously strengthen the construction of teachers and focus on cultivating dual-teacher teacher teams to ensure the rationality and effectiveness of the talent training mode. In the process of building teachers, relevant institutions can adopt the following strategies. Firstly, they can organize training for existing teachers to participate in, hire experts to explain their professional knowledge of new energy automobiles and virtual simulation technology, and encourage teachers to participate in training and exchange activities to improve their theoretical knowledge and practical skills, and thus promote the overall improvement of teaching quality <sup>[5]</sup>. Secondly, teachers need to constantly summarize the experience of dual-creation talent training in the teaching process, deepen the understanding of the dual-creation talent training model, constantly enhance teaching methods, and continuously improve the application of virtual simulation technology. Thirdly, the relevant institutions need

to organize the technical research and development of new energy automobile enterprises for teachers to participate in, invite the technical backbone of new energy automobile enterprises to teach in schools, and guide students to complete the internship and graduation design, so as to achieve the best teaching effect <sup>[6]</sup>.

#### **4.2. Building an education system based on virtual simulation technology**

Relevant colleges and universities need to establish an education system based on virtual simulation technology, set up a new energy automobile virtual simulation experimental teaching platform, establish the new energy automobile fault laboratory, new energy power system laboratory, new energy automobile construction laboratory, automobile marketing and evaluation simulation laboratory, and establish internal and external resource sharing platform. Teachers need to complete the platform management, guidance, and report correction, while students need to complete the knowledge preparation and timely submission of reports, teachers and students can interact on the platform <sup>[7]</sup>. At the same time, the relevant institutions need to make use of the networked and informatized characteristics of virtual simulation technology to continuously promote the teaching reform of the new energy automobile profession, provide students with high-quality learning resources, and improve the teaching methods in order to promote the comprehensive enhancement of students' innovation and practical skills and the core competence of the position. In addition, in the construction process of the virtual simulation-based education system, the relevant institutions need to constantly summarize the relevant experience, introduce talent cultivation model methodology, system theory, the second classroom, and the process of evaluation, teaching methodology, and other theoretical knowledge systems, dynamically assess the implementation of the education system under the virtual simulation technology, and develop effective improvement measures to ensure that dual-creation of talent cultivation goals are successfully achieved <sup>[8]</sup>.

#### **4.3. Establishing a dual-creation practice platform under virtual simulation technology**

The main advantage of virtual simulation technology <sup>[7]</sup> is that it can realize the integrated development of theoretical and practical teaching, which can effectively solve the problems existing in the practical teaching of some institutions. To this end, the relevant institutions need to fully understand the advantages of virtual simulation technology, establish virtual simulation technology under the dual-creation practice platform, carry out cross-college, cross-specialty, and cross-organizational multi-dimensional practice teaching on the platform, and create a practical teaching situation, to assist students in solving the complex engineering problems in the new energy automotive field and enhance their ability to analyze and solve problems. At the same time, the relevant institutions need to continuously optimize and adjust the resource allocation program, and improve the comprehensive utilization rate of various teaching resources, so that students can master the virtual simulation technology and new energy automobile operation technology, and then achieve the goal of dual-creation talent training <sup>[9]</sup>.

#### **4.4. Constructing a dual-creation-oriented practice system**

In the cultivation of new energy automobile dual-creation talents, engineering education plays an important role. High-quality engineering education can enhance the theoretical knowledge level and practical operation skills of engineers and technicians and cultivate their innovative spirit and ability. In the process of engineering education, the relevant institutions need to establish a combination of basic, cross-cutting, humanistic, and practical education systems, properly deal with the relationship between practical teaching and other teachings, build a dual-creation practice system suitable for new energy automobile specialties, and form a combination of experimental, practical training, engineering, and innovation teaching mode, in order to drive the overall improvement of students' practical skills and innovation ability <sup>[10]</sup>. At the same time, in the process

of implementing the dual-creation practice system, teachers need to establish a talent cultivation platform combining management, research and development, and service, and help students of new energy automobile majors to determine a reasonable career development plan, in order to meet students' personalized development needs <sup>[11]</sup>.

#### **4.5. Developing reasonable practical teaching evaluation methods**

In the process of carrying out dual-creation practical teaching based on virtual simulation technology, the relevant institutions need to establish a results-oriented, student-centered, and continuously improved practical teaching evaluation method to promote teaching reform and facilitate the continuous improvement of talent cultivation quality <sup>[12]</sup>. In the specific operation process, relevant institutions can take the following measures. Firstly, in the process of practical teaching evaluation, it is necessary to focus on the cultivation of students' ability, highlight the problem orientation, take the ability as the root, focus on evaluating students' ability to solve complex industrial problems and assessing their ability of numerical thinking, systematic thinking, innovative thinking, and comprehensive thinking <sup>[13,14]</sup>. Secondly, in the process of practical teaching evaluation, the relevant institutions need to focus on the evaluation of process capability, focusing on assessing the performance of students in program development, product design, thesis publication, invention patents, etc. The evaluation can help students understand their shortcomings, guide students to continuously strengthen the learning of theoretical knowledge and practical skills, and then promote the comprehensive enhancement of students' knowledge, quality, and comprehensive ability <sup>[15]</sup>.

### **5. Conclusion**

At present, China's new energy automobile field is developing rapidly, and the demand for professional talents has increased significantly. In order to meet the needs of enterprises, the relevant institutions need to optimize and adjust the talent training mode to cultivate dual-creative talents, introduce virtual simulation technology to complete the theoretical and practical teaching, and continuously improve the teaching methods and optimize the teaching content in the process of practice, in order to achieve the best teaching effect.

### **Disclosure statement**

The authors declare no conflict of interest.

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