

# Research on Teacher Training of New Energy Automobile

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**Abstract**—Currently, in the context of continuous improvement of new energy vehicles, the new energy vehicle technology faculty should also be further cultivated to ensure that new energy vehicles can have sufficient high-quality professional teachers to support and cultivate local applied talents, then promoting the further development of new energy automobiles in the automotive industry. To address the problem of insufficient teachers and low level of teachers in new energy vehicles, this paper, taking “New Energy Automobile Teachers Training” as an opportunity, mainly analyzes and explores the training of the new energy vehicle faculty. It is to improve the teachers’ level of new energy automobiles, implement the requirements for the development of new energy automobiles, formulate plans and measures for teacher training, optimize the teacher structure, further improve the professional skills of teachers of new energy automobiles, deepen the cooperation training mechanism between schools and enterprises, and solve the problems of lack of teachers and low level. Ultimately, it is to build a high-level teaching staff not only engaging in the theoretical teaching of new energy automobile, but also equipping with excellent professional technology to engage in practical teaching, and adapt to the training of new energy automobile talents.

**Keywords**—New energy vehicles; Teacher training; School-enterprise cooperation; Teaching method

## I. INTRODUCTION

Developing new energy vehicles with pure electric drive as the strategic orientation has become one of the ten key areas established by "the only way for China to become a powerful automobile country from a big automobile country" and "Made in China 2025"[1]. New energy vehicles ushered in unprecedented major development opportunities, at the same time, led to the upgrading and rapid development of power batteries and their industries. "Master the core technologies of low-carbon, informatization and intellectualization of automobiles, enhance the engineering and industrialization capabilities of core technologies such as power batteries, drive motors, high-efficiency internal combustion engines, advanced transmission, lightweight materials, intelligent control and so on."

Manufacturing in China is transforming into creating in China, and the automotive industry is in great need of a large number of new energy automotive technology talents. With

the rapid development of new energy automotive technology, the need of new energy automotive development in our institute is extremely urgent. However, the teachers in our college have the following features:

### A. Shortage of new energy automobile professional teachers

Teachers are the soul of education, and students' skill level needs the guidance and guidance of professional teachers. However, most of the teachers engaged in the teaching of new energy automobiles in our college are from traditional automobiles. The teaching experience of new energy automobiles is insufficient. They lack the practical experience of new energy automobiles and are not worth learning from. Some professional talents with good practical skills are not engaged in the teaching profession, but work in research and development institutions or enterprises[3], which leads to the shortage of teachers of new energy automobiles. The quality is low, the professionalism is not strong and so on.

### B. Difficulties in introducing high-quality professionals

At present, the state vigorously supports and advocates energy saving and emission reduction, green travel, the rapid development of new energy vehicles, industry talent gap is large, excellent doctoral graduates at home and abroad are especially in demand. Therefore, most University doctoral graduates choose well-known enterprises and institutions with good platform and high salary. However, our research platform is weak, there are many problems in the incentive policy of talent introduction, and we cannot absorb the introduction of high-level new energy automobile professional teachers which resulted in the shortage of new forces and talents [4]. Therefore, it is time to improve the overall level of teaching and research of new energy automobile teachers by participating in the teacher training project.

### C. The construction of double-qualified teachers needs to be strengthened

Teachers cannot be separated from practice in the process of double-qualification transformation. To integrate theory with practice, not only can they vividly explain theoretical knowledge, but also their operational ability and business needs are of the top priority. At present, although leaders attach great importance to the construction of dual-competent teachers and require teachers to enter enterprises for training, learning and exercise in their spare time or other time, due to

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the lack of in-depth cooperation between schools and enterprises and the difficulty of contacting training institutions, the enthusiasm of teachers is not high and the number of dual-competent teachers is small [5].

Based on the above problems, this project takes "New Energy Vehicle Teacher Training" as an opportunity and aims at improve the teachers' level of New Energy Vehicle and implement the development requirements of New Energy Vehicle, formulate teacher training plans and measures, optimize the teacher structure, further improve the professional skills of teachers of New Energy Vehicle and promote the school-enterprise cooperation training mechanism, solve teachers' problems [2]. Due to the shortage of resources and low level, a high-level faculty should be built that can not only engage in the theoretical teaching of new energy automobile, but also have excellent professional technology to engage in practical teaching, so as to adapt to the training of new energy automobile talents.

It has become the focus of current work to build a high level of new energy automotive teachers and new energy automotive technology talents.

## II. OVERALL SCHEME OF TEACHER TRAINING FOR NEW ENERGY VEHICLES

In view of the needs of professional development and the goal of professional teacher team construction in our institute, we adhere to the principle of people-oriented, renew the development concept, emphasize professional development and highlight competency-based; clarify the connotation of double-qualified teachers, improve the talent incentive and evaluation system, improve the construction of teacher team system, and formulate the following project content, task planning and implementation path. As shown in Figure 1.

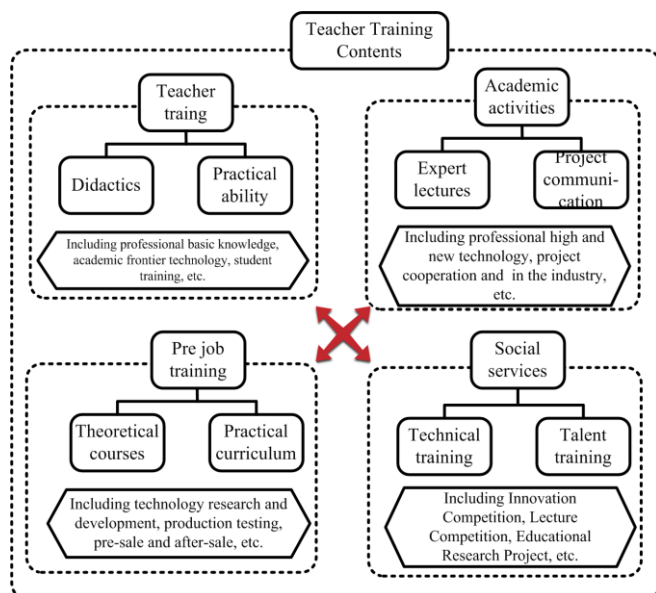


Fig. 1 Overall Program of Teacher Training

### A. The pre-job vocational training for school-enterprise cooperation.

With the goal of training new energy automobile technical talents and the mode of school-enterprise cooperation, starting from building platforms as shown in Figure2, upgrading matching and improving policies, we should build talent pools, gather talents and build a new energy automobile teacher team, focusing on new energy automobile technology, research and development, new energy automobile production, testing, new energy automobile marketing, after-sales service and so on. Students carry out pre-job vocational training. The college provides training venues and supporting facilities, and enterprises provide employment units for students to make bidirectional choices so as to achieve satisfactory employment results.

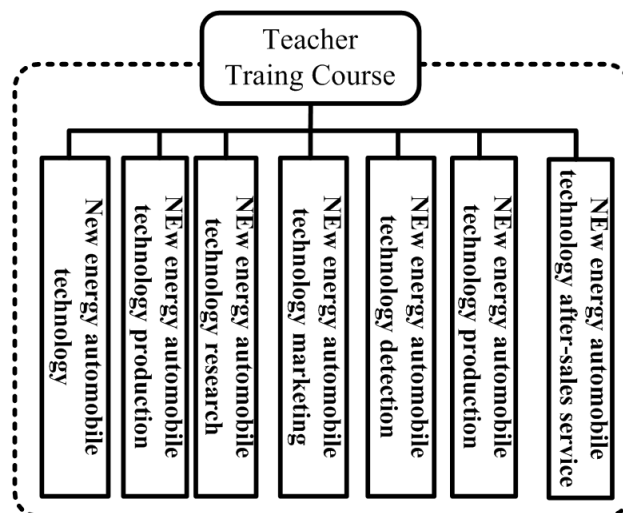


Fig. 2 Frame of pre-job vocational training

### B. Launching win-win academic exchanges program

Figure 3 shows that enterprises regularly send academic experts to give academic lectures in the academy, and carry out in-depth discussions around the core technology of new energy vehicles and the development of future intelligent travel technology, sharing the frontier technology and viewpoints. Create an academic exchange atmosphere, enable teachers and students to contact more professional knowledge, increase academic exchange experience, and effectively enhance the academic exchange ability of new energy vehicles. Lecture venues and expert fees are provided by the College [6].

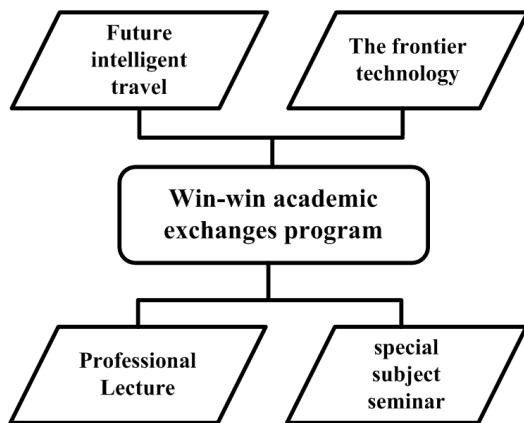


Fig. 3 Content of win-win academic exchanges program

### C. Conducting dual-ability teacher training in school-enterprise cooperation

Taking the dual-competent teacher training as an opportunity and taking the school-enterprise joint training course as a model, this paper explores the establishment of a long-term mechanism shown in Figure4 for the joint training of dual-competent teachers, and promotes the sustainable development and deepening of school-enterprise cooperation [7]. Combining with the characteristics of the school's own specialty and the needs of students' training, and making full use of the advantages of the school and enterprise in teacher training and student training, this paper makes a thorough study on the new knowledge and technology of new energy vehicles, the training of students of new energy vehicles, and the construction of new energy vehicles specialty.

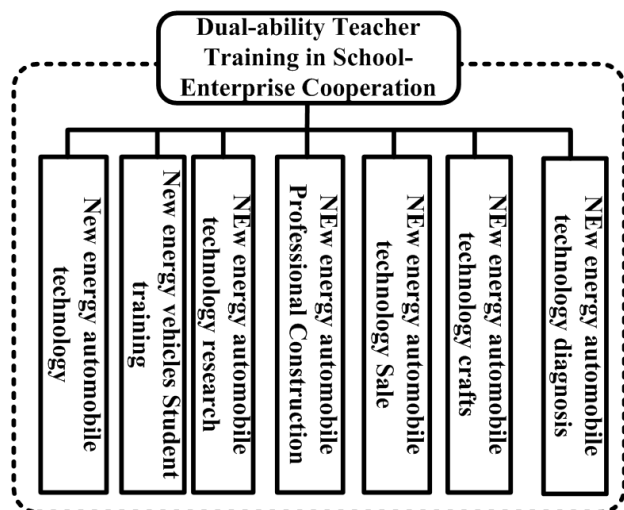


Fig. 4 Content of Dual-ability Teacher Training

### D. Developing projects to serve local cooperation

Actively serving the local economy and exploring the new mode of school-enterprise cooperation, the sustained and rapid economic and social development cannot be separated from high-level skilled applied talents, who are led by the college and participated by enterprises[8], jointly declare and

complete the research topics needed by local economic construction, and organically combine excellent educational environment and resources with the actual needs of enterprises, so as to carry out extensive local cooperation mechanism. Continuously improve the ability to serve the society and local economy displayed in Figure5.

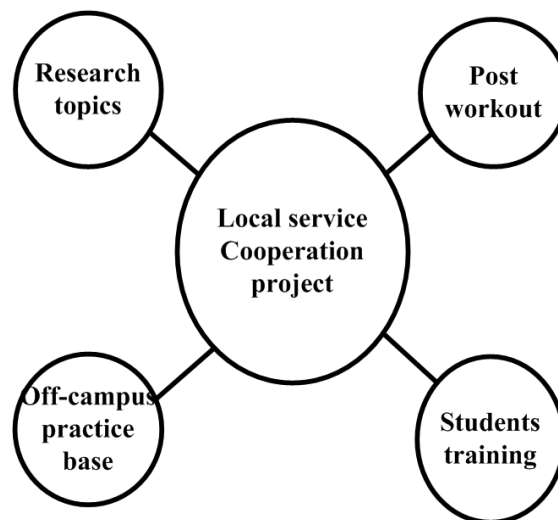


Fig. 5 Content of Dual-ability Teacher Training

## III. CONCLUSION

In summary, teacher training is an indispensable organic part in the whole teaching process which is one of the important teaching links. Through teacher training, teachers' engineering practice ability has been trained, teaching potential has been stimulated, good results have been achieved, and innovative and practical people have been trained.

- Through participating in teacher training, academic exchanges and other projects, we have created a strong and professional team of new energy automobile teachers.
- In the form of school-enterprise cooperation, we will jointly explore the development of teacher training projects to provide equipment for professional and disciplinary construction.
- Develop a scientific and rigorous training program for new energy automobile talents, and train high-level innovative talents in line with the needs of the industry.
- Gradually build the new energy automobile technology direction into the new energy automobile specialty, and even later become the backbone specialty of schools, cities and provinces.

The goal of talent has laid a solid foundation for teachers to move towards new jobs.

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