

# Analysis on the Construction of School-enterprise Cooperation Base for Transportation Majors

Lu Mingyu<sup>1,a</sup>, Feng Pengfei<sup>2,b,\*</sup>

<sup>1</sup>Anhui Sanlian University, He Fei, An Hui, 230601, China

<sup>2</sup>Anhui Sanlian University, He Fei, An Hui, 230601, China

**Abstract:** The transportation specialty cannot be combined with reality in the construction. Traffic engineering and transportation are the combination of my country's existing planning, and the professional potential is huge. The main mission of applied universities is to cultivate high-quality applied talents. Serving local economic and social development, the school-enterprise cooperation practice education base is the most important way to achieve the above goals. It is of great significance to improve the quality of application-oriented talent training and promote the technological transformation and upgrading of enterprises. The construction is guided by the educational concept of "enterprise-oriented, project-driven, ability training and overall development" to build a teaching platform for production, study and research. Establish a curriculum system that can optimize the corresponding curriculum, strengthen practical teaching, better promote the training of talents towards a good situation and continue to develop steadily. Transportation majors are under construction.

## 1 Introduction

School-enterprise cooperation is an important mode for application-oriented undergraduate colleges to train high-quality talents, and a basic way to achieve the training goals of applied undergraduate colleges. School-enterprise cooperation is an important mode for application-oriented undergraduate colleges to train high-quality talents, and a basic way to achieve the training goals of applied undergraduate colleges.

As a 2016 school-level quality project, the traffic safety school-enterprise cooperative practice education base project has a good construction foundation, and the project has been initially completed. In the past three years of practical education cooperation with the transportation company, certain achievements have been made.

Establish a closer school-enterprise cooperation relationship with Anhui Sanlian Transportation Application Technology Co., Ltd. Our school and Anhui Sanlian Transportation Application Technology Co., Ltd. belong to the same group. The school-enterprise cooperation is naturally a matter of course, but with the gradual growth of the school and the company, the cooperation between the two entities has become increasingly inadequate. This requires the use of provincial-level quality engineering projects, the improvement of the school's own development initiative, and the development needs of enterprises to further promote cooperation.

The promotion of the teaching staff. The low practical ability of the teaching staff is the bottleneck of the

<sup>a</sup>jlumingyu@126.com, <sup>b,\*</sup>18063780@qq.com

practical teaching work in colleges and universities. Teachers usually have heavy theoretical teaching tasks, and it is difficult to invest a lot of energy to guide students' practical teaching activities outside of class. This is a common feature of colleges and universities. Through the in-depth development of school-enterprise cooperation, the quantity and quality of teacher-enterprise temporary training will be improved. At the same time, increase the number of enterprise engineering and technical personnel to guide students' practical activities, such as some experimental courses, subject competitions, academic lectures, internship guidance and graduation thesis guidance. This "two-line" complementary practice education form helps to improve the speed and quality of school-enterprise cooperation and education.

Laboratory sharing is the difficulty of school-enterprise cooperative practical education. With the help of the advantageous platform of the Provincial Key Laboratory of Traffic Information and Safety, we can fully cooperate in the research of driving test system and the research of driver's physiology and psychology to realize the joint construction of the laboratory. Under this sharing mode, students have the opportunity to enter the scientific research laboratory and cultivate scientific research awareness. To achieve the purpose of scientific research and teaching.

## 2 Method

It is mainly carried out from four aspects: curriculum system optimization, talent training model improvement,

practical teacher team construction, and organization management system construction. The main construction methods are as follows.

### **2.1 Realize the optimization of the curriculum system**

According to the summary and analysis of the problems in the implementation of the 2018 version of the talent training plan, and with the opportunity of revising the 2020 version of the talent training plan, we will fully communicate and discuss with the practical education base partner companies, especially the optimization of the part of the practical teaching content, and strive to achieve precise, specialized and special practical teaching requirements.

Some compulsory general education courses are appropriately replaced by some courses with strong school-enterprise cooperation practice and education. According to the engineering technical characteristics and job skills requirements of Anhui Sanlian Transportation Application Technology Co., Ltd., some general education courses for engineering practice are specially designed, such as the frontier of traffic safety discipline, intelligent transportation technology and application, production lectures of various departments of the enterprise, etc. In order to enrich the enterprise knowledge of students in the subject and specialty.

Among the professional elective courses, some courses are replaced by enterprise-related courses. The instructors are enterprise engineering and technical personnel, such as product research and development, pilot test, quality management, business development and other courses, so that students can better and faster contact the enterprise's engineering technology production.

Increase the proportion of credits in practice teaching. In the intensive practical education of the professional education platform, part of the in-class practice content is replaced with the enterprise practice in the professional elective courses. The teaching method is the on-site practical learning of the enterprise, and the school teachers and the enterprise engineers guide the teaching mode at the same time.

### **2.2 The talent training model is more reasonable**

During the construction of the project, students of all grades can independently participate in academic competitions above the school level. The college will establish a student competition file to closely integrate teaching and scientific research that can integrate school-enterprise cooperation, closely cooperate with the school and the society, and learn in scientific research. Entries for learning in social practice, practical ability to solve practical problems and innovation and entrepreneurship ability, Extra points will be given in terms of comprehensive quality assessment and usual results.

Establish a new model of "passing and leading" students. Through high-grade students, lower-grade students can participate in practice, technological innovation, etc., so as to achieve common progress and

promotion.

Establish 1-2 sessions of "Sanlian Engineering Technology Naming Class" to better provide enterprises with professional talents who are quick to get started and have strong skills.

Combining modern education and teaching methods to enhance the effect of practical teaching. Breaking the traditional practice teaching methods such as visitor and verification, with the help of information technology and multimedia technology, to create a cooperative construction of MOOC, online teaching and other resources for practical teaching.

### **2.3 Establish and improve the organization and management system**

Establish a school-enterprise cooperative "dual tutor system" practice teaching management system. Realize the regularization of the practical guidance of enterprise engineering and technical personnel and university teachers to students, increase the corporate training of university teachers and the practical guidance of enterprise engineering and technical personnel to students, and expand the guidance link to subject competitions, scientific research experiments, professional internships, graduation thesis, etc. Effectively improve the quality of students' practical education.

Establish a management mechanism for in-depth school-enterprise cooperation. Through research and learning, establish and improve the salary management mechanism for school-enterprise cooperation personnel, refine the identification of equivalent workload for teachers and enterprises, and the standards and salary standards for enterprise engineering and technical personnel to guide the work of the school, so as to achieve the maximum win-win cooperation between schools and enterprises.

Establish a school-enterprise practice education base achievement opening mechanism, extend the school-enterprise cooperation and win-win mechanism model to other universities in the province and the society to open up, and share high-quality practical education resources.

## **3 Results**

After the construction of a traffic safety school-enterprise cooperation practice education base, we will strive to create a close combination of teaching and scientific research in our school's traffic safety related majors, and close cooperation between the school and society, promote college students to learn in scientific research, learn in social practice, and improve students' Practical ability to solve practical problems and innovation and entrepreneurship ability. The specific expected results are as follows:

The proportion of school students participating in science and technology competitions has increased significantly. According to the annual selection of more than 30% of the students in the first grade, 20% of the second-year students are selected to participate in the requirements, nearly 50% of the first and second-year

students participate in the annual subject competition, and a group of students are selected to participate in the country Level science and technology competition.

Construct a two-level faculty team of schools and enterprises. After construction, 5 "dual ability" teachers have been trained, and 3 enterprise engineers have been introduced using the "dual track system".

Realize 3 school-enterprise shared laboratories. Through the construction of the project, the sharing of laboratories such as driver behavior research and driving safety research will be built to achieve the purpose of scientific research sharing and back-nurturing people.

Both the school and the enterprise jointly guide the students' graduation thesis work. According to the project construction plan, no less than 10% of the students are selected each year to participate in the thesis of the enterprise engineering technology subject, and the thesis is guided by the school and the enterprise dual tutor.

Continue to jointly build the "Sanlian Engineering Technology Title Class" in line with the company's employment needs and the concept of building a win-win situation, each year a group of outstanding students are selected to participate in cooperative classes for study, internship, and employment. To achieve the purpose of promotion and application.

## 4 Discussion

To build a multi-level time talent training system as the main line, to carry out in-depth practical teaching activities, and establish and improve the classification and training mechanism of traffic safety practical talents as the starting point. Deepen the reform of education and teaching through the construction of a traffic safety professional practice education base, Drive and promote important links in the professional construction of teaching team, curriculum system, teaching methods and means, practical teaching, teaching management, etc., to achieve the goal of comprehensively improving the quality of practical talent training proposed by the "Quality Engineering" project. Eventually, students learn in scientific research and learn in social practice. Improve students' practical ability to solve practical problems and innovation and entrepreneurship capabilities.

Improve the practical education level of transportation disciplines. Taking the revision of the 2020 version of the talent training plan as an opportunity, and promoting the construction of a provincial school-enterprise cooperation practice education base, Anhui Sanlian Transportation Application Technology Co., Ltd. will be the main research object and expanded to the entire traffic safety industry and intelligent transportation fields. Through thorough research, Form a "result-oriented" talent training program and optimize the curriculum system.

The benefits of practical education are extended to all majors in the traffic safety professional group. Focusing on transportation majors, taking into account traffic safety majors such as traffic engineering, safety engineering, etc., through the construction of practice bases, more than 30% of the first-year students are selected each year, and 20% of the second-year students are selected to participate.

Sanlian Engineering Technology Practice Teaching Base Activities, The school-academy-company will provide them with excellent training, technical support and experimental platforms. With the help of this platform, students are encouraged to actively organize and apply for provincial and national college students' innovation and entrepreneurship practice projects.

Continue to promote the cooperation of the "Sanlian Engineering Technology Title Class" to achieve a win-win situation for students in practice and employment. On the basis of the original "Sanlian Engineering Technology Title Class", optimize the school-running model, increase practical education and teaching methods and means, make full use of the school-enterprise cooperation platform, and take the job requirements as the entry point. Arrange the teaching plan of cooperative classes with technical requirements as the main line of practice.

Through the construction of school-enterprise cooperation and practical education, it is possible to realize the real questions of the transportation majors, innovate the thesis model, and improve the ability of students to solve practical technical problems. Change the traditional graduation thesis model, and realize the teacher-engineer dual tutor system based on the fact that no less than 20% of the students participate in Sanlian Transportation Company's scientific research and technical thesis writing in each session.

Joint school-enterprise cooperation units to steadily promote traffic safety technology competitions. Taking the Anhui University Student Transportation Technology Competition hosted by our school as a starting point, in conjunction with Anhui Sanlian Transportation Application Technology Co., Ltd. and its research institution (National Vehicle Driving Safety Engineering Technology Research Center), a school-company dual tutor system is established to increase student participation The competitiveness of the work.

Under the leadership of Anhui Sanlian Group, and with the full cooperation of the National Vehicle Driving Safety Engineering Technology Research Center and Sanlian Transportation Technology Application Co., Ltd., the school's strong support is an important guarantee for the construction of a school-enterprise cooperative practice education base for traffic safety. Construction, the school provides key support in policy, Give tilt and support in terms of hardware, software, capital, and personnel.

## Acknowledgments

Anhui Sanlian University-Anhui Sanlian Applied Traffic Technology Co.,LtdD Practice education base(2019sjjd61)Research on EPS/ESP control system integration under the design coordination control rules in the "person-vehicle-road" closed-loop system ( Grant NO.KJ2020A0797 ) Key Laboratory of Traffic Information and Safety of Anhui Higher Education Institutes (KLAHEI18018)

## References

1. Cao Chuan, Pan Yang, Sun Qin, Gan Guangsheng. Exploration and research on the school-enterprise co-construction of practical education base for food specialty—Based on Anhui Vocational College of Grain Engineering[J]. *Journal of Shandong Agricultural Engineering College*, 2020, 37(08): 82-86.
2. Xiao Wen, Hu Juan. Analysis on the Principles and Paths of Building School-Enterprise Cooperative Practice Education Bases in Local Applied Universities[J]. *Journal of Liaoning Institute of Science and Technology*, 2020, 22(02): 44-46.
3. Liu Jiexiang, Jiang Yue. Research on the construction path of school-enterprise cooperation practice education base based on talent training [J]. *Journal of Jingdezhen University*, 2020, 35(01): 74-79.
4. Wang Ruixia, Lu Zhimin, Wang Shouling, Wu Guanghui. Construction and practice of off-campus practice education base for materials major[J]. *Journal of Chizhou University*, 2019, 33(06): 141-143.
5. Zhang Jianhui, Ji Huawei, Wu Xin. Implementation of "Excellent Engineer Education and Training Program" Enterprise Learning [J]. *Journal of Hangzhou Dianzi University (Social Science Edition)*, 2019, 15(02): 66-69.
6. Li Xiaoxiao, Sun Fuchun. Research on the construction and management of off-campus practice bases for college students based on the cultivation of applied talents—Taking Chengdu University Chengda Sichuan Automobile Engineering Practice Education Center as an example[J]. *Journal of Chengdu University (Social Science Edition)*, 2018( 06): 115-120.
7. Qin Lijian, Fei Xingxing. Research on the construction of school-enterprise cooperation practice education base[J]. *Journal of Suihua University*, 2018, 38(05): 114-117.
8. Hu Yuna, Liu Dongmei. School-enterprise win-win and integration: Discussion on the innovation and practice of the construction model of industry-university cooperative education base[J]. *Journal of Shandong Institute of Agricultural Engineering*, 2015, 32(03): 171-172.