Exploration and practice of practical teaching of automobile inspection and maintenance major in higher vocational education under the background of "Three Education" reform

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Abstract. The "three education" reform was explicitly proposed in the National Vocational Education Reform Implementation Plan in January 2019, that is, the reform of teachers, teaching materials and teaching methods, which runs through the whole process of talent training, directly related to the fundamental issue of "who, how and for whom to train people", and is the top priority of the development of higher vocational education in the new era. The biggest difference between higher vocational colleges and undergraduate colleges is to cultivate high-end skilled talents. The cultivation of skilled talents cannot be separated from practical teaching. Taking the automobile inspection and maintenance specialty in higher vocational colleges as an example, this paper analyzes the role and importance of each practical teaching link in cultivating students' skills and other qualities.

1 Introduction

The talent training goal of vocational colleges is to cultivate compound talents who can meet the needs of society. The purpose of implementing the "three education" reform in higher vocational colleges is to cultivate high-quality technical and technical talents who combine morality and technology, knowledge and practice. The cultivation of skilled talents can not be separated from practical teaching. Therefore, it is of great significance to explore how to pass the practical teaching in the teaching process under the background of the "three education" reform in vocational colleges. It is an important guarantee to cultivate students' safety awareness, standardization awareness, time awareness, responsibility awareness, craftsmanship spirit, labor spirit, model labor spirit, exploration spirit, and innovation spirit in the goal of talent cultivation.

Since 2006, the automobile inspection and maintenance specialty of our school has cooperated with Mercedes Benz in schools and enterprises. It has successively cooperated with BMW, Citroen, Jaguar Land Rover, Ford and other car brand dealers or manufacturers in schools and enterprises, and sent teachers to Germany, France, Britain or specialized training classes organized by enterprises for training in teaching methods, practical skills,

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theoretical knowledge, assessment methods, etc. After training, teachers have introduced the advanced teaching methods of foreign vocational education, enterprise training staff and the latest technology of enterprises into the classroom. At present, the practical teaching of the automobile inspection and maintenance specialty of our school mainly includes the following forms: integrated teaching of theory and practice, centralized practice of the specialty inside and outside the school, post placement practice, graduation thesis. Through these forms of practical teaching and training, Students can quickly become qualified maintenance technicians and technical backbones after graduation.

2 Integrated teaching of theory and practice

At present, the professional courses of automobile inspection and maintenance in our school adopt the integrated teaching method of theory and practice. This method is to transfer the course teaching from the ordinary classroom to the training room. There are theoretical teaching areas and practice stations in the training room. During the course, teachers use teachers to teach and organize students to learn theoretical knowledge or practice in different forms in groups After students finish learning in groups or operations, they can share the results of group or independent learning and other teaching methods through lectures, posters, PPT and other different ways. Theoretical learning and practical learning account for about 50% each. Through a variety of learning methods, we can mobilize the enthusiasm of students to learn, and turn "I want to learn" into "I want to learn". In terms of learning materials, in addition to traditional textbooks, teachers will also use self compiled handouts and enterprise maintenance materials corresponding to practical models as learning materials, prepare work orders for students, and record the work process and test results. Through this way of learning, students can learn how to use basic tools; It can cultivate students' awareness of safety and standardization; Ability to retrieve, read and understand maintenance data; Cultivate teamwork and communication skills in the process of group work and learning; In the process of teachers or students' explanation, the students who listen to the lecture can learn to listen carefully. At the same time, after listening, they can also supplement or comment on the students' explanation, so as to exercise the students' ability to think independently; For the students who explain, exercise their language expression ability.

3 Centralized practice in the school

The centralized practical training in the school is generally arranged after a part of theoretical courses are completed, and usually 1-2 weeks are arranged in each semester. In the process of integrated learning of theory and practice, because of the limited class hours, students have no opportunity to do some operations every time, and some operations with certain difficulties have no time to practice repeatedly. Through concentrated practice in the school, they can carry out comprehensive project training after learning several courses, under the guidance of the old teachers of practical training, and integrate the knowledge learned from several courses as a whole practical training project, Through repeated practice, improve students' practical skills. In the centralized practice class, teachers will also have about 20% of theoretical knowledge to explain in order to cooperate with the practice teaching, so that students can better master the practical knowledge. The combination of centralized practice meeting and 1+X evidence collection not only tests the learning achievements of centralized practice, but also enables students to obtain skill certificates. In the process of concentrated practice, students can personally experience what is craftsmanship spirit, labor spirit, inquiry spirit, etc.

4 Concentrated practice of enterprises outside school

The centralized practice of enterprises outside the school is generally based on the students' completion of the integrated theory and practice courses such as Automobile Maintenance, Automobile Power System Fault Diagnosis and Detection, or 1-2 times of centralized practice in the school, and according to the talent training program, students are arranged to go to the automobile 4S store for 2-3 consecutive weeks of practice. Generally, according to the size and reception capacity of 4S stores, each store arranges 3-6 students for internship. During the internship, each student will have a master from the 4S store for one-to-one guidance. The internship positions are mainly mechanic. Sometimes, according to the wishes of students or the specific conditions of 4S stores, students are arranged to work as service reception, parts warehouse administrator, warranty officer, dispatcher and other positions. Generally, during an internship, in order to enable students to deeply learn the work content of a certain post, they will not change their posts during an internship. During students' internship, teachers should do a good job in management and guide students to practice how to communicate with teachers, how to learn from teachers, and what aspects to focus on. Students write a summary of the practice every day after the practice and send it to the teacher. The teacher makes a timely evaluation according to the summary of the students. If necessary, the teacher guides students how to solve various problems encountered in the practice through telephone, WeChat, etc. The teacher will also communicate with the teacher of the enterprise about the students' performance during the internship, and give timely guidance and correction to the students' improper practices during the internship. Through enterprise practice, because students are doing practical work, they have made rapid progress under the one-to-one guidance of a master. Some students have been able to independently carry out maintenance for customers on various models of vehicles and solve some actual fault cases after the internship. Students are very welcome to participate in this kind of practice. In the process of enterprise practice, students' safety awareness, standardization awareness, time awareness and responsibility awareness have been better tempered and improved than centralized training in schools.

5 Post practice

After two and a half years, after completing all the courses of the school, the last semester, after being recommended by the school, the students and the enterprise make a two-way choice through interviews, go to the professional counterpart enterprises to directly participate in the production process, comprehensively use the knowledge and skills learned in this major, complete certain production tasks, further obtain perceptual knowledge, master operating skills, and learn enterprise management, It is a practical teaching form to develop a correct attitude towards work. In the process of internship, students, as a regular employee of the enterprise, participate in the production of the enterprise, and are under the dual management of the school and the enterprise. The enterprise pays salaries, provides labor security, and enjoys the benefits provided by the enterprise according to the standards of interns. By the end of the internship period, students can successfully pass the enterprise assessment, and they are willing to stay in the enterprise to continue working. The enterprise can sign a formal employment agreement or labor contract with students. Some students can be promoted to regular employees after obtaining their graduation certificates, and do not need to go through the probation period again. Students feel that employment is guaranteed, and enterprises also welcome such a recruitment mode, because during the internship, students and enterprises have a very deep understanding of each other.

If during the internship period, students are not suitable for some management modes of the enterprise, or are incompetent or dissatisfied with the job content of the job, or the

enterprise is dissatisfied with the students' performance and work ability, students can return to school and wait for new enterprise recruitment opportunities. The school understands the reasons through both students and enterprises, and provides corresponding guidance for students're employment. Avoid being returned by the enterprise for many students' personal reasons, which will affect the final employment of students.

6 Graduation design (Thesis)

Graduation design (thesis) is a comprehensive assessment for students. In the process of doing graduation design or writing graduation thesis, students should have a certain theoretical basis and practical skills. For students majoring in automobile inspection and maintenance, the graduation design is generally to design or improve the tools and equipment for automobile inspection and maintenance. The graduation thesis is to write a solution to a system fault of automobile. It is required to describe the fault phenomenon, explain the working principle and composition of the system and the role of each component, analyze the possible causes of the fault, and finally find the fault point and solve the problem through troubleshooting from easy to difficult. Whether it is the graduation design or the writing of graduation thesis, in the process of completing this practice link, the students have been trained to comprehensively use the professional knowledge they have learned, the computer application ability, the ability to summarize, and the students' spirit of inquiry and innovation. In the defense link, students' language expression ability, speech ability and communication ability can be trained.

7 Conclusion

In a word, under the background of the "three education" reform, as a school, we should make overall arrangements for a more reasonable stage of practical teaching and prepare for the corresponding training conditions; As a teacher, we should carefully organize and arrange each practical course, so that students can learn real knowledge and skills in the classroom, so that every student majoring in automobile inspection and maintenance can truly master professional skills through certain practical learning at different stages of the learning period. At the same time, for the long-term development of students, students should ensure that they learn not only professional knowledge and skills, but also learning learning methods, so that they can learn new knowledge and skills in the future; Learn how to communicate and get along with others better in a team; Learn how to work as a team. Many tasks cannot be completed by one person alone. You must learn how to work as a team to better complete the work; Cultivate safety awareness, standardization awareness, time awareness, and responsibility awareness to complete the corresponding work safely and effectively; Only by cultivating the spirit of craftsman, labor and model worker can we complete the work with quality and quantity guaranteed and make due contributions to the society and the country; Only by cultivating the spirit of inquiry and innovation can we be competent for more challenges in the future of continuous technological development. As a vocational college, we cultivate more high-end skilled talents, so that each talent can make corresponding contributions, which can converge into the development and progress of the country and society, and make our country lead the world in automotive and all related technology fields.

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