Optimization strategy of teaching mode for automobile manufacturing and test technology specialty in Higher Vocational Colleges

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Abstract: the teaching optimization results of automobile manufacturing and test technology major are directly related to the talent training effect of automobile related industries, which is closely related to the prosperity of automobile industry and the great development of automobile market. As an important base for the cultivation of skilled talents in automobile manufacturing and testing technology, the major of automobile manufacturing and testing technology in higher vocational colleges must combine the development needs of talents with the integration of production and education, connect with the relevant industrial chain, re optimize and adjust the teaching mode of the major, and formulate teaching objectives in line with the development of the major, so as to meet the specific needs of talents in various positions of automobile in the new era. This paper focuses on the teaching mode optimization strategy of automobile manufacturing and test technology specialty in higher vocational colleges, and strives to carry out teaching reform from different angles and dimensions, in order to contribute to the comprehensive improvement of teaching quality and talent ability.

Key words: higher vocational education; Major in automobile manufacturing and test technology; Teaching mode; Optimization strategy

Introduction

With the prosperity and development of the automotive industry, the demand for skilled and technical talents in the automotive production and manufacturing industry has increased significantly. At the same time, the industry also puts forward higher requirements for the professional ability of employees, which forces the automotive manufacturing and testing technology major in Higher Vocational Colleges to closely focus on the needs of the industry, innovate teaching concepts and update teaching methods guided by the working process, Effectively implement the “three education reform” plan, truly create favorable conditions for the optimization of professional teaching mode, and make professional teaching glow with a new look and increase new vitality.

1. Overview of automobile manufacturing and test technology specialty in Higher Vocational Colleges

The major of automobile manufacturing and testing technology belongs to a brand-new professional catalog. The major of automobile manufacturing and testing technology is changed from the major of automobile inspection and maintenance technology. The talent training objectives of this major focus on having good professional ethics and innovation and entrepreneurship, while firmly mastering the manufacturing, testing, inspection and maintenance skills of household fuel and new energy vehicles, and meeting the requirements of fuel and new energy vehicle body and component design, maintenance and debugging of automotive intelligent manufacturing equipment, vehicle reshaping and refittingTechnical and skilled talents with all-round development of morality, intelligence, physique, art and labor who are required for positions such as the design and application of automotive intelligent networking and automatic driving technology. The course of automobile manufacturing and testing technology mainly involves three modules, namely professional basic courses, professional core courses and professional elective courses. The course covers a wide range of fields, including diversified theoretical and practical contents including mechanical drawing, automobile design, electrical and electronic technology and automobile culture. At the same time, the employment prospect of this major is also very broad, Professional graduates can choose to engage in experimental research, quality inspection, workshop equipment management, technical management and other work; You can also work as a repairman or technician, mainly responsible for the reshaping and refitting of all kinds of cars, and the intelligent Internet connection of cars.

2. Analysis of the existing problems in the teaching of automobile manufacturing and test technology specialty in Higher Vocational Colleges

First of all, the traditional teaching mode is difficult to fully mobilize students’ initiative in learning. According to the actual investigation, although the teaching conditions of automobile manufacturing and test technology specialty in various higher vocational colleges have been optimized at this stage, various kinds of on campus and off campus training bases have been gradually improved, and the integration of theory and practice teaching has been widely concerned by many front-line teachers, some teachers’ teaching ideas are traditional, and professional teaching methods still remain in the single direction of teachers’ output. Generally, The teacher is responsible for imparting knowledge and technology demonstration, and the students conduct group practice. Finally, the teacher comments on the actual operation of each group. In the whole teaching process, students are in the position of passive acceptance of knowledge, which will directly restrict the stimulation of students’ internal potential, and their learning desire is difficult to improve, which may eventually lead to low learning quality and efficiency.

Secondly, there is a certain blindness and randomness in the selection of teaching content, which is lack of pertinence. Due to the rapid updating of automobile manufacturing and testing technology and the high frequency of updating professional knowledge and skills, the

teaching content that teachers need to deal with every day also surged, and some teachers felt at a loss. Many teachers did not know which content should be the focus of professional teaching and which skills should be the key ability to cultivate students. This requires teachers to extract typical work tasks from the actual work process of enterprises, and design teaching content around work tasks, which may achieve twice the result with half the effort.

Finally, teachers' teaching ideas did not keep up with the change of students' learning methods in time. In the context of the Internet era, students' access to information is not limited to textbooks, but more and more ways. Especially with the development and popularization of information technology, students can search for a lot of information conducive to learning on the Internet. From this point of view, the Internet has fundamentally changed the way students learn, and has also brought more new ideas to teacher education and teaching, providing a series of new platforms. In this context, the focus of teachers' work should be shifted from traditional knowledge transfer to guiding students to achieve autonomous learning. However, at present, few teachers can act as a good student learning guide, assistant and leader.

3. Optimization strategy of teaching mode for automobile manufacturing and test technology specialty in Higher Vocational Colleges

3.1 Implement the reform of "three educations" based on 1 + X certificate system

First, teacher reform. The implementation effect of 1 + X certificate system is closely related to teachers' comprehensive ability. At present, most of the teachers who work in the teaching of automobile manufacturing and test technology major have directly graduated from school and entered the job. They lack front-line work experience and practical skills, and sometimes it is difficult to meet the implementation needs and requirements of the 1+x certificate system. It can be seen that teacher reform is the primary task of optimizing the teaching mode of automobile manufacturing and test technology specialty. On the one hand, higher vocational colleges should pay close attention to recruitment. The most effective way is to directly introduce excellent engineers working in enterprises as training instructors to make up for the lack of professional practice teachers nowadays. For those young teachers who directly enter the job after graduating from colleges and universities, the school should provide them with more opportunities to observe high-quality classes, or encourage teachers to take advantage of the annual winter and summer vacation to participate in enterprise internships, so as to effectively improve their practical operation ability. On the other hand, actively mobilize professional teachers to participate in the pilot work of the 1+x certificate system. The school should arrange relevant training for teachers on a regular basis. First, teachers should have a comprehensive and in-depth understanding of the 1+x certificate system, and then teachers can impart the knowledge they have learned to students, which is of great benefit to improve the pass rate of students' examination.

Secondly, the reform of teaching methods. Nowadays, higher vocational students may have lost interest in the traditional teaching mode. In order to fit the actual situation of students, teachers can introduce the online + offline hybrid teaching method. Before the examination, teachers can upload knowledge points to the network platform in advance for students' autonomous learning, and then encourage students to discuss problems online, and teachers can answer questions in time. Finally, in the formal classroom, the teacher, as the guide of the students, guides the students to continue the group discussion while explaining the key content, which has a positive effect on promoting the deep integration of the 1 + X certificate system and the teaching of automobile manufacturing and test technology.

Finally, teaching material reform. The quality of teaching materials has a direct impact on the teaching results of automobile manufacturing and test technology specialty in the later stage. Based on the requirements of the 1 + X certificate system, higher vocational colleges should integrate the assessment focus of the 1 + X certificate system into the latest teaching materials in the reform of teaching materials, so that students can master the assessment content of the 1 + X certificate system while learning professional knowledge. In addition, higher vocational colleges should add the latest process and technology of automobile manufacturing and testing technology specialty to the teaching materials, so that students can timely understand the latest development trend of the industry, which is very helpful for students' employment and entrepreneurship in the future.

3.2 Building a three-dimensional innovation and entrepreneurship practice teaching system

In order to fundamentally solve the problem of students' difficult employment, higher vocational colleges should strengthen the education of their innovation and entrepreneurship, and truly provide more possibilities for students' smooth employment and independent entrepreneurship.

First, add characteristic innovation and entrepreneurship courses to the major of automobile manufacturing and test technology. For example, we should build an integrated teaching curriculum structure of "economy, information, business, science and technology" in the curriculum system, highlighting the innovation and Entrepreneurship of educational content. In addition, teachers should not only carry out professional teaching for students, but also appropriately integrate humanities courses, innovation and entrepreneurship guidance courses, practical training courses, etc. It is worth mentioning that the content of education and teaching should closely follow the forefront of the development of the times, and it is best to seamlessly link theory and practice, so as to improve the overall teaching quality of the major. For example, sand table simulation and automobile simulation test teaching are added to the existing training courses; Automobile management courses and operations research courses are added to the technical courses.

Secondly, the teaching method of integrating the concept of work integrated learning. For example, higher vocational colleges can jointly hold large-scale lectures with the theme of "innovation and entrepreneurship" with local enterprises; Fully mobilize the initiative of students to participate in the innovation and entrepreneurship plan guidance activities regularly held by enterprises; In order to enable

students to timely understand the development trend of the industry, higher vocational colleges should make full use of alumni's strength to invite students who have been successfully employed or started a business to return to school again to share their entrepreneurial and employment experience with them; Establish an online business forum in the school, where enterprises can publish recruitment information and provide a good platform for students' employment; Special training mode is adopted to actively encourage students to participate in professional post training in enterprises, so as to effectively improve the matching degree of talents and posts.

3.3 Deepen school enterprise cooperation and break through the difficulty of internship quality

School enterprise cooperation is one of the important parts of practical teaching of automobile manufacturing and test technology specialty, and it is also an effective way to improve students' comprehensive ability. In the past, the internship effect of automobile manufacturing and test technology specialty was not ideal. Therefore, higher vocational colleges must deepen the school enterprise cooperation, fully highlight the unique educational value of enterprises, effectively provide students with a good internship practice platform, and comprehensively improve the quality of school enterprise cooperation.

First, select high-quality cooperative enterprises. As for the major of automobile manufacturing and test technology, when choosing high-quality cooperative enterprises, higher vocational colleges mainly focus on large automobile manufacturing plants. On the one hand, it can accommodate more interns, and on the other hand, it can accurately cultivate modern technical and skilled talents that meet the target ability level. However, in order to achieve this goal, higher vocational colleges need to deploy in advance and follow the principle of fewer but better. Colleges and enterprises can jointly discuss internship positions, number of interns and internship period, so as to ensure that students will enter the enterprise internship related to their majors every year, and fundamentally avoid the impact of uncertainty in talent demand on internship arrangement.

Secondly, determine the backing enterprises. Many schools have "factories in schools". Schools should give full play to the unique educational role of such productive practice bases and reach a long-term cooperation agreement with them as a backup force for on-the-job practice support and vital assistance. This kind of internship base mainly accepts students who cannot participate in off campus enterprise internship on time due to personal special reasons, and improves their comprehensive employability by re arranging internship positions for them.

Finally, ensure the quality of cooperation. The enterprise and the school should each send special personnel to be responsible for the internship docking work, so as to meet the demands of both parties as much as possible. With the permission of the enterprise, school teachers can enter the enterprise production workshop or other positions related to automobile production and manufacturing to truly understand the real-time work situation of students, so as to better manage their internship. Ensure the equality and freedom of cooperation between schools and enterprises through similar on-site research.

Epilogue

To sum up, this paper focuses on the optimization strategy of the teaching mode of automobile manufacturing and test technology major in Higher Vocational Colleges from three aspects: the implementation of the three education reform based on the 1 + X certificate system, the construction of a three-dimensional innovation and entrepreneurship practice teaching system, the deepening of school enterprise cooperation, and the breakthrough of practice quality, It is hoped that this research can cultivate more high-quality and comprehensive talents that meet the requirements for the long-term development of the automotive production and manufacturing industry.

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