

Application and Analysis of Integrated Teaching Mode in Teaching Reform of Automobile Maintenance Specialty

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Abstract: *Behind the current educational reform and development, the development of vocational training must also be integrated into advanced educational concepts. The training direction of vocational education schools is clearer than that of ordinary universities, that is, training applied talents is the educational goal. This paper discusses the background and function of "combination of theory and practice" in automobile repair specialty, discusses the development methods and existing problems of "combination of theory and practice" teaching method, and puts forward some reference suggestions.*

Keywords: Secondary; Auto repair major; Integration of theory and practice; Teaching mode.

1. INTRODUCTION

There are many problems in PTA professional teaching, and the theoretical knowledge and practical content cannot be well combined. In order to adapt to the situation of automatic error correction personnel in today's society, when carrying out self correction teaching activities, the traditional mode should be changed, and a new concept of "theory and reality" should be combined to build a platform for students to participate in activities. Professional self correction knowledge should be flexibly applied on the platform to create learning motivation while improving the learning efficiency of self correction courses. Seriously optimizing traditional teaching spaces, seizing opportunities, and combining theory with practice can also become the greatest value of the automotive maintenance industry, contributing to the development of the automotive maintenance field.

2. ANALYSIS OF THE CONCEPTUAL CHARACTERISTICS OF INTEGRATED TEACHING MODE

The integrated teaching mode is a new educational model proposed within the framework of current educational reform, which conforms to the overall characteristics of modern educational development. In this teaching mode, teachers should closely integrate theoretical knowledge with students' actual lives. Especially in the field of automotive maintenance, which has strong practicality, students should develop their own learning plans. Teachers design classrooms by combining students' teaching objectives with their skill development systems. Basic education is supplemented by multiple teachers, and students can apply theoretical knowledge of automobile maintenance. Students can quickly establish their own learning methods and systems. When students quickly absorb and manage data points, they can reach a new level of practical experience.

Its main purpose is to connect theory with practice and break the traditional teaching space and teaching concepts in the field of automotive maintenance. The integration of different student relationships and the rational allocation of student learning time mainly include the following characteristics: systematicity, coherence, and permeability. Teachers can understand students' learning needs and develop appropriate learning plans based on their characteristics, thereby achieving global educational goals.

3. THE BACKGROUND AND ROLE OF IMPLEMENTING INTEGRATED TEACHING OF THEORY AND PRACTICE IN THE AUTOMOTIVE REPAIR MAJOR OF VOCATIONAL COLLEGES

The teaching method that combines theory with practice is a new teaching form that has emerged based on the suggestions of the new curriculum reform. It supports the organic combination of theory and practical activities in teaching, enabling students to cultivate and improve practical skills to a certain extent through the management of theoretical knowledge. Unlike the previous teaching philosophy that focused on improving practical skills, the

teaching form that combines science and practice places more emphasis on practice and theory, promoting each other, rather than enhancing individual education's contribution to teaching, such as skills. Therefore, it has great advantages in improving students' professional skills and enhancing their overall quality. After the education reform, secondary vocational schools and universities have also carried out new teaching quality reforms, improving students' skills, balancing teaching objectives, and promoting reasonable and practical overall teaching will play an important role in promoting the education reform of secondary vocational education and training institutions. Teaching in different disciplines. Especially in the field of automotive inspection and maintenance, its impact will be more pronounced. Due to the continuous development and updating of the automotive industry, automobile maintenance and repair have occupied a large market share in the economic structure of modern society. The market is adapting and optimizing, and the speed of updating knowledge and skills is also very fast. This requires secondary vocational colleges to attach importance to the development of automotive maintenance giants, in order to find a way to improve the real-time updating and improvement of professional education content. Students' high understanding of updated content and skills, as well as their application of comprehensive rationalization methods and reality, meet the needs of vocational education reform and provide a good driving force for the development of middle-class talents in the professional maintenance market competition.

4. THE IMPORTANCE OF INTRODUCING INTEGRATED TEACHING MODE IN AUTOMOTIVE MAINTENANCE TEACHING

4.1 Improve the quality and efficiency of school education, enhance the reputation of universities

How does talent cultivation directly affect the influence of talent cultivation in ordinary schools? By introducing comprehensive teaching spaces in teaching, teachers can change their mindset, focus on theoretical teaching, cultivate students' practical skills, improve the quality of vocational training, enhance the quality and influence of talent cultivation in schools, and ultimately enhance the school's reputation.

4.2 We need to improve the employability of talents

With the improvement of people's quality of life, the demand for automobile maintenance is becoming increasingly high, making it difficult for industry experts to meet actual needs, and the level of demand for enterprise talents is also constantly increasing. In this context, vocational school talent cultivation is facing enormous pressure: only by reforming traditional talent cultivation methods and introducing teaching models that are more suitable for market demand can we meet the needs of the times. The overall teaching mode meets market demand, taking into account both theoretical and practical teaching, enabling students to have good comprehensive qualities, strong practical abilities, and good market employment capabilities.

4.3 Encourage students to participate in learning

In traditional teaching models, teachers dominate and students are in a passive listening position: there is less communication between teachers and students, and students' interest in learning is also lower. With the introduction of integrated teaching models, the situation may change. Teachers can guide students to the corresponding practice rooms for teaching, allowing them to learn theoretical knowledge while participating in practice, making the classroom atmosphere more lively. Students can communicate with teachers and students around them, help them experience the joy of learning, and continuously improve their interest in learning.

5. METHODS AND PROBLEMS OF IMPLEMENTING INTEGRATED TEACHING OF THEORY AND PRACTICE IN AUTOMOTIVE REPAIR MAJOR OF VOCATIONAL COLLEGES

In the practice of combining teaching with practice, vocational college automotive maintenance majors should introduce simulated workflow. The so-called workflow simulation module refers to setting up a practical course for automotive testing and maintenance driving courses, developing "work tasks" for each category, and allowing students to play a professional role in simulating vehicle problems and actual inspection and maintenance during training. On the one hand, it aims to stimulate students' learning interest, and on the other hand, cultivate their professional ethics and work ethics, and enhance their sense of responsibility and functionality. After completing their work, students have gained a general understanding of future work processes and qualifications, which helps

them avoid career disadvantages in non-technical activities in the future; In this process, students can acquire a specific and practical theoretical knowledge, enabling them to have a more systematic understanding of knowledge and skills, and quickly discover and practice problems they are not good at. However, currently, many renowned vocational school automotive repair teachers do not fully understand the true significance of combining science with practice in teaching. They mostly distinguish between theoretical interpretation and further practical demonstration. Some teachers only increase the contribution of practical classrooms and believe that they follow the concept of combining science with reality. But the real impact is far from being realized. In addition, in the development of teaching, many teachers' theoretical knowledge and skills have become outdated and cannot be applied to advanced or even future garages. However, teachers' cognition and students' vision cannot be improved, resulting in an unrealistic educational impact.

5.1 Lack of places and environments for practical teaching

Implementing integrated teaching of automotive care is an integral part of the cooperation between standardized training rooms, relevant schools, and companies. However, from the specific situation of Chinese technical schools, many schools have not established standardized automobile maintenance training facilities, some schools have low construction levels, lack different equipment and facilities, and have not established standardized education processes and systems, which makes it difficult to meet the actual learning needs of students. Many schools do not have training rooms at all, relying solely on teachers' oral explanations and multimedia videos to convey practical information to students in daily teaching. At present, there are still many schools that have not cooperated with affiliated companies, and the depth of school enterprise cooperation is insufficient, making it difficult to provide students with a good internship environment conducive to effective practical teaching.

5.2 Unscientific teaching evaluation

Teaching evaluation is an important link that affects students' learning motivation and also has a significant impact on their learning priorities. In the current situation, many technical school teachers take theoretical grades as an important assessment basis for evaluating students, focusing too much on students' theoretical grades and not on their practical skills, thus guiding students to pay more attention to theoretical learning in practical learning, improve evaluation results, and ultimately determine practical learning and enhance practical skills.

6. APPLICATION STRATEGIES OF INTEGRATED TEACHING MODE IN THE TEACHING REFORM OF AUTOMOTIVE MAINTENANCE MAJOR

6.1 Guide teachers to change their ideological concepts and gain a deeper understanding of the integrated teaching model

In order to introduce a global automotive maintenance teaching model, it is necessary to strengthen teacher training so that teachers can better understand the benefits of the global teaching model.

Firstly, we should regularly organize teachers to learn about the relevant content of the global teaching model, and stimulate their understanding of the combination teaching model from different perspectives such as educational impact and teaching quality.

Secondly, we should organize relevant teacher forums to jointly explore the experience and skills of integrated teaching.

Thirdly, bring communication between automotive repair teachers to schools, strengthen connections among all parties, enable teachers to understand more practical information, guide students to learn effectively, and promote a change in mindset.

6.2 Situation Introduction, Integration of Theory and Practice in Classroom

The teaching form that combines science and practice not only requires a high degree of organic integration of theory and practice with teaching, but also proposes a new development form for the form and atmosphere of classroom education, that is, student-centered, and the application and development of teaching tools revolve around stimulating students' interests and absorbing knowledge. It is suggested that teachers use the scenario

based teaching mode as a classroom demonstration, allowing students to experience the actual process of using automatic calibration in a simulated real car maintenance environment. Presenting tasks in intuitive image control or simulation systems can allow students to pay attention to and think about the actual maintenance of cars. This new experience not only fills students with freshness and seriousness, but also deepens their impression of educational content. In the following set of practical functions and theoretical supplements, we aim to improve educational effectiveness. At the end of the teaching, the author used multimedia images to spread this situation in the classroom. The training module 'Use and Maintenance of Cars' has been explained. Firstly, the author used multimedia devices to demonstrate to the students that the first steam powered tricycle appeared after the application of the steam powered vehicle scheme in the history of automobile development, which had an impact on the students; Then there is an example and an introduction that students know in their daily lives. The most interesting questions for students will be collected in the next practical class. Taking students to the school's simulation laboratory to conduct routine technical checks on the liquid position in the engine compartment is the most concerning issue for students in their previous classroom practice assignments. In this way, students can engage in real activities and alternate exercises, and practice diligently under the guidance of theoretical knowledge. In practice, their theoretical understanding has also been well consolidated and elevated.

6.3 Teachers use auxiliary teaching to stimulate students' interest in hands-on practice

Compared to students, the content of textbooks is relatively dull, which requires teachers to use auxiliary means to increase students' interest, such as the simplest educational theory multimedia in the book, and to create animations or videos through multimedia to arouse students' interest. He wants to practice, and then students will think and act based on the video content to solve the boring theoretical knowledge problems in the textbook. It can also provide students with motivation for learning and practical activities. Vocational school students have poor abstract ability. Before explaining theoretical knowledge, teachers should study the textbook, choose teaching content, emphasize teaching priorities, and students should relax in practical activities.

For example, when teaching Chapter 3 "Common Geometric Drawing Methods", teachers can use multimedia to reproduce several commonly used geometric drawing methods for students: 1. Using a triangular board as a common angle. 2. Draw the perimeter of the plane in meters and regular polygons. 3. Slope, shrinkage, shaping, and marking. 4. Arc connection: An arc connects two known straight lines, an arc connects two known arcs (inner and outer), and an arc connects a known straight line and an arc.

6.4 Utilizing Concepts to Deepen Teaching Content

The concept of combining science with practice has been widely applied in the ongoing reform of secondary vocational education and training. Due to the fact that teachers are limited to traditional teaching, they directly explain the actual content of the textbook. The data in many self-study textbooks are similar. In practice, new data content can be visualized, making it easier for students to become confused, thus the concept of teaching cannot be achieved through the combination of theory and reality. Practice is the sole criterion for testing truth. Therefore, teachers should build more training platforms for students to improve their practical skills, and enhancing students' skills is also an important prerequisite. To implement this theory, teachers should stimulate students' learning confidence in self-study textbooks based on their psychological characteristics. There is a lot of abstract data that makes it difficult for students to learn. In this way, teachers can design relevant questions to help students learn the content and improve their learning level. Strong thinking ability enables students to successfully solve problems and increase their confidence.

When the teacher teaches about the production and maintenance of automotive chassis, students will receive real platform equipment that they can inspect and disassemble. When teachers teach theoretical knowledge, they can ask students to observe the structure of the car chassis based on the explained content and confirm the theoretical data learned from students in class.

6.5 Guide students to use both hands and brains

In automobile repair teaching activities, theoretical knowledge is used to create the basic concepts of automobile repair for students, while practice is used to test the learning outcomes of students' theoretical knowledge and the combination of theory and practice. In practice, teachers can enrich their teaching space and adopt different teaching methods. For example, group collaboration is a way to encourage students' learning motivation. In group

discussions, students develop differences in thinking and improve their thinking abilities. It is worth noting that in the group, the teacher should average the learning ability of each group. Students of different learning levels can be separated through mutual assistance, promoting their teamwork spirit, enhancing their sense of unity, and creating a good sense of solidarity. In group cooperation under a self correcting learning atmosphere, teachers can also understand the degree of acceptance of each learning outcome. There are problems in learning practical activities or theoretical knowledge during group work. Teachers should help students identify the causes of problems and solve them in a timely manner, thereby gaining students' confidence and establishing a good teacher-student relationship.

For example, when teaching "Construction and Maintenance of Automotive Engines", the purpose of this course is to enable students to understand the basic structure, basic conditions, working principles, and engine structure. The teacher first teaches students to learn theoretical knowledge from books. The teacher may ask: What is the structure of the engine? How does it work? Students obtain theoretical information through group discussions, and teachers use predetermined structures and engines. Team members assigned to each team can disassemble and assemble engines. According to the group cooperation mode, students in each class can participate in theoretical learning and practical training, thereby improving their participation and teaching effectiveness.

A complete teaching space is a complete model that is not only suitable for professional automotive maintenance teaching, but also for other forms of vocational education and training; Teachers must learn this teaching method and apply it in conjunction with specific situations. At the same time, schools should also strengthen the creation of a practical education environment, actively cooperate with enterprises, and provide a good environment for students to better participate in practice. Reforming the evaluation system, improving the scientificity of evaluation, and laying a solid foundation for implementing the global teaching model.

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