Research on the reform of automobile testing curriculum under the background of intelligent

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Abstract: Under the background of intelligent manufacturing, the teaching and implementation of automobile testing course should keep pace with The Times. Detection course of automobiles is a particularly strong practical transportation professional course, this article mainly analyzes the automobile detection course of original defects in the teaching method, raise the significance of the integration of teaching and teaching methods, teaching means reform practice, through the reform to improve the students' interest in learning, practice ability, flexible use of theoretical knowledge ability to solve practical problems, It is conducive to the cultivation of applied talents. It is conducive to the cultivation of intelligent manufacturing talents.

1. Introduction

Theory and practice integration teaching method is the integration of theory and practice teaching method. Breaking through the phenomenon of disjointed theory and practice in the past, the teaching link is relatively concentrated. It emphasizes to give full play to the leading role of teachers, by setting teaching tasks and teaching objectives, let teachers and students teach, learn and do, build a quality and skill training framework throughout the whole process, enrich classroom teaching and practical teaching links, improve the quality of teaching. In the whole teaching process, theory and practice are carried out alternately, intuitionism and abstraction are intersected, and there is no fixed fact followed by reason or reason followed by reality, while there is truth in reason and rationality in reality. It is a teaching method that highlights the cultivation of students' practical ability and professional skills and fully mobilizes and stimulates students' interest in learning.

At present, a variety of applied disciplines in the province and domestic are widely used in the integration of theory and practice teaching. Auto detection and diagnosis technology is the main professional course for students majoring in traffic classes, is also engaged in vehicle detection, vehicle maintenance and other related work of the main theoretical basis, the curriculum theory and practice are strong, to a solid grasp of course covers knowledge, through the single and traditional teaching methods is difficult to achieve the desired effect. Therefore, it is necessary to integrate theory and practice in the teaching method of automobile detection and diagnosis technology. At present, vocational colleges in the province and even in China have gradually adopted the teaching method of integrating theory and practice, and it is imperative for application-oriented undergraduate courses like ours to implement the integration of theory and practice. In the process of the integration of theory and practice teaching, a variety of teaching methods and means are adopted, such as the combination of project teaching method, case method, group discussion method and other methods, combined with training equipment, learning resources and other teaching methods.
2. The problems existing in the teaching implementation process of the original automobile testing course in our school

2.1. Teaching Methods Single Teaching Means
The original teaching method of automobile testing course is only pure theory teaching, which is easy for students to understand and dislike listening to. The teaching method is mainly with the help of PPT, and students turn a blind eye to it. Therefore, both teaching methods and teaching means are too single, unable to effectively improve students' interest in learning, and the teaching effect is not good.

2.2. The course content is unreasonable
Car testing course teaching content is some old, original on the market at present most of the auto detection part in teaching content of the course is not used in the actual process of knowledge, have a plenty of knowledge, have a plenty of instruments and equipment, have a plenty of detection methods, but still takes up a lot of space in the teaching material of narrative, the outdated, obsolete, contents, methods should not be done in explanation, so you need to keep pace with The Times to integrating the teaching content, and some knowledge is not suitable for applied school study in our school, our students to the requirement of the theoretical knowledge is for a sufficient degree, to cultivate the students' application ability, So we should reasonably arrange the teaching content to achieve our training objectives.

2.3. There is no practical teaching process
Vehicle inspection original teaching the theoretical explanation is given priority to, no training content, some testing instrument and equipment can not into the classroom, students don't know what testing equipment instrument is, don't know need to detect the location of the equipment or systems in the car, students can only accept boring abstract theory knowledge, students can't flexibly apply theory to practice, don't know instruments and equipment in practice, but also don't know which need to use specific equipment detection equipment and systems. Unable to mobilize the learning enthusiasm of students, students passively learn, or even do not learn, so the teaching effect is very bad.

2.4. Single assessment method
The original assessment method of automobile testing course is mainly carried out through closed-book examination, plus the situation of attendance and homework, which can not effectively reflect the students' true grasp of this theoretical knowledge. Some students attend school every day and write their homework carefully every day. Will he study well and learn it? High time of the exam, he may only be rote, didn't understand some of the testing process of knowledge, high scores, still don't have the ability to solve practical problems, so the original theory of attendance, homework and examination assessment form cannot really assess students to really master situation of auto detection course, is impossible to judge students' ability to solve practical problems, and as a practical very strong car testing course, learned without solving practical problems, it doesn't make any sense.

3. Project implementation process

3.1. Specific research and practice objects:
Object of research and practice: Students from Class 1-2 of Transportation, Grade 2018 and Grade 2019, Direction 1. With 18 students, it is more suitable to carry out the integrated teaching of theory and practice. Generally, it can be divided into 4 groups and the teachers can take care of it.

3.2. Content of research and practice

3.2.1. Adhere to the leading idea of "student-centered and ability-based" in the teaching process
Let students actively participate in the teaching process, improve students' interest in learning,
improve students' learning ability and comprehensive ability to deal with problems.

3.2.2. Teaching integrating theory and practice
Venue set up comprehensive laboratory in the car, the car comprehensive laboratory include vehicle, engine training platform, transmission training platform, automobile electric equipment training, automotive air conditioning training platform, multimeter, decoder and various automotive equipment and testing instrument for the detection and diagnosis technology, can teachers in the teaching process of the car and equipment to interpretation, such as multimeter test battery voltage, can directly operate, edge, the student is very intuitive see the multimeter for how to check voltage, multimeter, what, what battery, multimeter pens and how to connect, be clear at a glance, Teacher can let students practice after the presentation, so that students don't have to dream what instrument, how to connect to, need not rote learning to master relevant knowledge, as long as they can personally try once, then it is hard to forget how to operate, and with the help of a decoder detection engine fault of each system, pure theoretical explanation, decoder boot, connections, use at least about more than ten minutes, the students may not imagine how is, if in lab for usage need not 2 minutes to see at a glance. Therefore, full use of experimental instruments and equipment to teach the course content of automobile detection and diagnosis technology, which fully combines theory and reality, is easy for students to understand, accept quickly, not easy to forget and interested in learning.

3.2.3. Reasonable setting of teaching methods
According to the teaching content set up reasonable teaching methods, such as project teaching method, case analysis method, group discussion method, etc. The failure of each system and each device can use case analysis method, the teaching experiment equipment, chassis dynamometer can be through the project teaching method, such as fault detection results of the analysis, can be done through group discussion method, these can let students actively participate in classroom teaching, greatly improve the students' study enthusiasm, improve the student beginning ability, improve students make full use of theoretical knowledge solution actual problem ability.

3.2.4. Combination of various teaching methods
Teachers can teach through PPT, with the help of practical training equipment such as training platform, and with the help of network resources such as Learning Pass, students can conduct independent learning. PPT summary of knowledge points, training equipment, training platform can see the installation of each part and device, can see the working process of each system, some can also dynamically demonstrate the working principle, students can also in the learning through network teaching platform to see the quality of similar courses, take its essence, expand the scope of knowledge.

3.2.5. Reasonable setting of content and practice projects
Integrate the teaching content and divide the course content into several modules. Each module determines the teaching content according to the situation of automobile testing in practice, and then determines the practical items with the existing equipment, so that students can learn the knowledge that keeps pace with The Times, and at the same time, they can practice by themselves and solve practical problems with the theoretical knowledge they have learned.

3.2.6. Reasonable setting of the assessment link
Instead of the original is through attendance, assignments, notes, students theory examination way of appraisal, the involvement of students in the process of examination, hands-on work, using the instrument testing equipment and various system, eliminate all the equipment and system fault condition to determine the student performance, avoid only as a test paper to test students' mastery of knowledge, avoid high score low-energy.
4. Main problems solved by the reform of automobile testing curriculum

4.1. To change the problem that students do not pay attention to class carefully in traditional teaching, and to adopt various teaching methods and means based on the integration of theory and practice, so that students are deeply involved and have no time to slip away or do things unrelated to class.

4.2. To avoid the separation of theory from practice, students can directly see the engine, transmission and other physical objects, and see the working process of the engine and air conditioning.

4.3. Improve students' practical ability, flexibly use theoretical knowledge to solve practical problems, so that students can adapt to the relevant positions of automobile testing and maintenance more quickly after graduation.

5. Research and practice to achieve the goal

5.1. The integrated teaching of theory and practice can fully mobilize the enthusiasm and initiative of students in the teaching process. Because of the intuitive stimulation, the integrated teaching of theory and practice improves the students' interest in the knowledge they have learned, so that they can use the knowledge they have learned to engage in teaching activities consciously.

5.2. The integrative teaching of theory and practice is based on the nature of students. Students' active participation in the teaching process can make students' personality develop freely and form their independent personality, which is conducive to enhancing students' subjective consciousness.

5.3. A variety of teaching methods in the process of teaching, let students actively participate in teaching, cultivate and improve students' ability to organize, assist, innovation and other abilities

6. Features and innovations of this topic

6.1. Features:

6.1.1. Integrating theory and practice, teaching directly in the automotive laboratory, good combination of theory and practice.

6.1.2. Reasonable use of various teaching methods, such as project method and case analysis method, to make students actively participate in the teaching process.

6.1.3. Multimedia, learning and other teaching means to make full use of, improve students' independent learning ability, expand the scope of knowledge.

6.2. Innovation points:

6.2.1. The learning environment simulates the employment environment and enables students to solve practical problems in school.

6.2.2. Students are deeply involved in the teaching process to improve their learning interest and comprehensive problem-solving ability.

7. The significance of this topic to promoting teaching work and improving teaching quality

7.1. Integrating theory and practice teaching can well combine theoretical knowledge and practical knowledge of automobile testing
The teaching place is set in the automotive comprehensive laboratory, students can learn and practice, improve students' interest in learning, strengthen students' understanding of abstract theoretical knowledge, improve students' operational ability, improve students' ability to solve practical problems.

7.2. A combination of various teaching methods
The combination of project teaching method, case analysis method, group discussion method and other teaching methods can enable students to deeply participate in the teaching process, fully mobilize students' learning enthusiasm, change the state of students who do not contribute to the work and listen to the class, so that students can grasp the theoretical and practical knowledge more firmly.

7.3. Making full use of training equipment and network resources and other teaching means can expand students' scope of knowledge, so that students can adapt to the requirements of automobile testing related jobs more quickly.

8. Conclusion
In a word, the teaching implementation of multiple teaching methods and means through the integration of theory and practice in the teaching process can improve students' interest in learning, improve students' ability of theoretical application and practice, help students to adapt to their jobs faster in the future, and cultivate a group of high-quality applied talents for enterprises.

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