

Teaching Strategy on Diagnosing and Removing Automobile's Failure

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Abstract: This article first analyzes the problems existing in the teaching about diagnosing and removing automobile's failure, and then discusses some specific teaching strategies on diagnosing and removing automobile's failure to provide some effective reference for the related staff.

Keywords: Diagnosing and removing automobile's failure; Problems; Teaching methods; Practical teaching

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1 Introduction

Up to now, the majors about automobile in various colleges follow the needs under the advancement of the times in the curriculum arrangement. In the students' professional training, not only must they master the theoretical bases, but they should also strictly assess the actual students' operation level, which are related to the career of each student after graduation. Diagnosing and removing automobile's failure is also a skill that must be mastered by students in automobile major^[1]. The following specifically explores what kind of teaching methods and strategies should be applied to achieve satisfying teaching results.

2 Problems in the teaching about diagnosing and removing automobile's failure

The course of teaching about diagnosing and removing automobile's failure is mainly to train students to diagnose and remove problems in automobile systems. It is an important course in the automotive major^[2]. The rapid development in the automobile industry currently

makes the technology tend to go electric, intelligent, and networking. Therefore, some relevant colleges have paid more and more attention to the courses in teaching about diagnosing and removing automobile's failure. However, most of the professional students still find it hard to learn the course about diagnosing and removing automobile's failure. After analysis, the reasons are as follows.

3 Specific strategies for diagnosing and removing automobile's failure

3.1 Democratic Teaching Gives Full Play to Students' Initiative in Self-Learning

The implementation of democratic teaching can effectively activate the classroom atmosphere and greatly improve the teaching quality. The so-called democratic teaching is mainly reflected in the teacher-student relationship. Teachers and students can be equal to make exchanges and discussions, which is very important for students to take the initiative to study independently. In the teaching about diagnosing and removing automobile's failure, the learning atmosphere is freer than that of regular classroom teaching, so teachers can take full advantage of this to combine training with classroom teaching, for example, the diagnosis and removal of automotive machinery usually refers to the analysis of the friction, wear and tear and fatigue that occur during the working of the machine^[3]. Teachers can use multimedia to play related video. Students watch the video and combine the basic principles they have learned to conduct exploration of completing analysis of the failure. This teaching strategy can give full play to students' initiative to communicate and learn, to inspire and develop their thinking skills. Teachers and students are equal in

the process. Teachers are participants, guides and collaborators in students' learning and growth, and students are still the main part.

3.2 Improve teaching methods and teaching quality

After analyzing the reasons why most students find it hard to learn about diagnosing and removing automobile's failure, it is found that it is just a simple explanation of some basic concepts and principles and cases^[4]. The lack of systematic and advanced teaching methods make it very difficult to achieve satisfying results. Therefore, according to the characteristics of diagnosing and removing automobile's failure and the needs of students, the teaching mode of theoretical basic

knowledge will be changed to combine the theories with practice. Here are some of the teaching methods:

3.2.1 Task-based teaching method

This teaching method is action-oriented and combines professional knowledge and skills through an integration of the profession and the work to help students better understand the relevant basic theories and apply them to practical problems.

The determination of the task must be targeted and cannot be separated from the teaching objectives of the course. According to the specific requirements of the course about diagnosing and removing automobile's failure, the teaching tasks are specifically designed (Table 1).

Table 1. Task divided in Task-based teaching method

Order	Learning task	Time
1	Removal of heated water in the engine	6
2	Removal of oil pressure with a warning light in the engine	6
3	Removal of engines with insufficient power	8
4	Analysis of insufficient power of machines extracting rail oil with high pressure	6
5	Removal of clutch slip	8
6	Removal of heavy steering	6
7	Removal of deviation when driving	6
8	Removal of brake failure or inaccuracy	8
Sum		54

In designing specific course, actual arrangements should be made according to different automobile failures. Common and typical automobile failures are the main content of the teaching activities^[5]. This task-based model can effectively stimulate students' interest and the sense of achievement in learning and participating, and the designer of the task should also encourage students to actively participate in it, and actively adopt good ideas, which fully reflects the student's main position in teaching. In the field of study, students can discover problems independently. Researching problems is a key part of learning. In the process, teachers should give full play to the role of facilitator to guide the students, so that students can grasp which questions are valuable, which will lay a good foundation for learning and practice. In addition, students are encouraged to search for information and conduct researches on the valuable issues raised, and develop a good habit of self-learning.

Finally, the evaluation after completing the task is also a key part of the teaching method. On the one hand, students make self-evaluations on the performance and gains during the entire learning process, and on the other hand, the teacher makes an objective evaluation. This evaluation is not simply to evaluate the results of this teaching activity, but to compare the entire task with the expected goals, to find problems from them, and to lay the foundation for future learning and students to solve problems in practice in the future. The simultaneous evaluation is also an effective way for students to learn from each other^[6].

3.2.2 Using micro-teaching method for practical training course

The practical training course plays an important role in the course of diagnosing and removing automobile's failure. It is an indispensable teaching part for students to practice and solve practical problems and apply the

theories learned. Therefore, in the process of diagnosing and removing automobile's failure, the teacher must first take a systematic training course so that students can learn the work process in reality through the map of the systematic training course.

The application of micro-teaching methods in the teaching of practical training courses can effectively refine a big task into multiple small tasks. Each character has both independence and correlation. Through micro-division, it can help students sort out ideas that are subdivided to better understand and easier for students to solve, effectively enhance their self-confidence and improve learning efficiency. As a teaching method favored by the educators in the networking age, micro-lectures can be used for micro-teaching of various small tasks. Short and intensive micro-lectures do not occupy a lot of time in the classroom, but can improve teaching quality with their retention and simplicity.

For example, the teacher created a scenario based on the teaching goals in the practical training class: After a car has been driving for a long time, the engine overheats and the cooling machine does not rotate under idle speed. What might be the cause of the problem? Take group discussion as an example, some of them may suffer the damage of the fan or the temperature sensor of the coolant liquid; others may suffer the out-of-work relay of the fan or the blown fan fuse, etc. According to the students' answers, the teacher can mark out various possible causes through the fishbone diagram and let students analyze according to the divergent thinking of the figure^[7].

Although the students can say something about theoretical analysis, the practical operation is difficult for the students in the automobile major. Even if they have mastered some theoretical bases, they still feel blank in practice. At this time, the teacher can insert some micro-lecture videos related to various small tasks prepared before the lesson, so that students can master the specific operation through the video. They also master the relevant theories to apply in practice. At the end of the course, it is necessary to make an analysis of evaluation based on the entire teaching process and results, concluding the deficiencies to find an optimal

choice for the next teaching activity^[8,9].

4 Conclusion

In conclusion, teachers should pay attention to the combination of theory and practice in the teaching process, and use a systematic teaching method, combining typical faults of automobiles at present as the main object to analyze, using task-based and micro-teaching methods to effectively help students learn better^[10]. Through these teaching methods, not only can students better grasp theoretical knowledge, but also help stimulate students' divergent thinking and ability to analyze problems, as well as improving students' learning passion and teaching quality.

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