

Research on "action-oriented" education and teaching under the teaching reform of automobile specialty

Shunli Feng¹, Lingli Jiang², Jie Yang³

¹Department of Automobile, Henan College of Transportation, Zhengzhou, 450005, China

²Henan College of Transportation, Zhengzhou, 450005, China

³13th Division Vocational and Technical School, Hami, 839108, China

Keywords: automobile major; education reform; action orientation; teaching research

Abstract: At present, the talent training of China's automotive industry is still in a long stage. How to cultivate high-quality and skilled automotive professionals has become the same problem faced by automotive care workers. We should use modern scientific educational means and some new ideas to study educational work. In recent years, China's automobile industry has developed rapidly, and the demand for employees is also increasing. However, what modern companies need is not only manpower, but also skilled talents with continuous learning ability. Colleges and universities are the cradle of cultivating skilled talents. We should recognize the current problems, adopt teaching reform, adjust course content, reform teaching methods, adapt to the employment standards of enterprises, and cultivate high-quality skilled talents. The application of action oriented teaching methods in automobile majors has greatly enriched the teaching forms and methods of automobile majors, made students obtain more efficient learning methods, and comprehensively improved their comprehensive quality.

1. Introduction

With the development of society, people's life rhythm is accelerating day by day. In this era, cars have become a very important means of transportation[1]. On this basis, the relevant departments of our country have carried out a series of teaching activities to enable them to better understand the courses of automobile majors[2]. However, in practice, they have not produced significant results. Therefore, relevant departments must take corresponding measures in education and teaching to improve the vocational education of automobile maintenance specialty and improve its teaching effect[3]. At present, in higher vocational colleges, most teachers' meaning of "action-oriented teaching" is still at a simple level. Therefore, we must sort out the concept and connotation of "action-oriented" in an all-round way to prevent them from going astray in the reform. Professor Raines of England put forward the "behavior-oriented teaching method" for the first time in the 1960s. After that, it was widely popularized and applied all over the world[4]. A series of experimental teaching reforms were carried out in vocational education and vocational preparatory education, which promoted various action-oriented teaching activities, promoted the implementation of disciplines, specialties and training institutions, and achieved good results. It made the "action" teaching widely used in 1980s, and gradually formed the "action-centered" teaching mode.

The "dual system" reform in Germany is an action oriented teaching idea, which requires students to have comprehensive knowledge, skills and key skills, and to replace the traditional discipline system with a vocational system[5]. In order to achieve this goal, we must change the traditional teaching methods, connect with enterprises, and organize and arrange teaching according to the actual production needs of enterprises[6]. In the long-term exploration and research, German educational circles have formed a set of action oriented teaching ideas, which have had a profound impact on Vocational Education in all countries. The purpose of higher vocational colleges is to cultivate creative, practical and comprehensive higher engineering and technical talents. For students majoring in automobile, through experiments and internships, they can better master the

knowledge they have learned[7]. However, due to the traditional concept of experimental teaching, the experiments and laboratory construction of automobile majors can not meet the needs of educational development. The reform of practical teaching and the improvement of experimental environment are important ways to improve students' professional quality and creative ability[8]. Under the teaching reform of automobile major, "action oriented" education and teaching should constantly explore new teaching methods and methods in teaching, so as to cultivate high-quality professional and technical talents and realize zero distance docking with enterprises.

2. Concept and features

2.1. Basic concepts of "action-oriented" pedagogy

"Action-oriented", also known as "practical guidance", refers to the teaching method of "focusing on the heart, brain and hands" and "taking human development as the foundation". Action-oriented teaching is a kind of comprehensive, active teaching process, which is led by the behavior product decided by teachers and students in class. "Action-oriented" is essentially the establishment of a social relationship environment in which teachers and students interact in the whole process of teaching activities, thus forming an assumption of behavior. Action-oriented teaching is a professional-oriented, learning task-based, non-disciplinary and ability-based teaching method[9]. Starting with the purpose of guiding students to learn how to learn, we have realized the transformation from "teaching" to "learning method", closely linked "teaching" with "learning" and implemented the teaching mode of "teacher-student interaction". In the process of teaching, teachers are the instructors of activities and the organizers of teaching. Action instruction embodies the teaching principle of "learning-based", which not only enables students to master knowledge, but also to learn how to do it, how to survive in life and how to get along with others. Action instruction focuses on stimulating students' learning motivation and interest. Action-centered teaching method is a skill-centered teaching method, which has played a great role in promoting students' comprehensive quality and ability. "Action-oriented" refers to the ability-centered teaching method, which is mainly guided by behaviors or tasks. By reconstructing learning objectives, learning contents, learning methods, learning media and other elements, the interactive relationship between students can be constructed[10]. Taking teaching and learning as a social activity, students use their brains, hearts and hands in the process of learning. It focuses on cultivating people's key ability, cultivating students' interest in learning, innovative thinking and key ability in activities. Figure 1 is the composition chart of action-oriented ability.

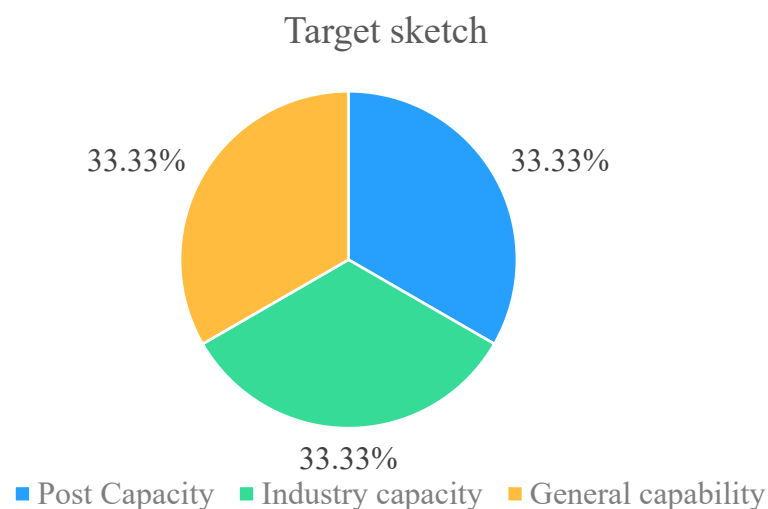


Figure 1 Composition of action-oriented capabilities

2.2. The characteristics of action-oriented teaching method

Action guided teaching takes students' active behavior transformation as the ultimate goal, and shapes students' cognitive, social, emotional and other multidimensional personality with a variety of autonomous teaching styles and problem-solving methods. In teaching, teachers' teaching methods vary according to different technologies, but on the whole, their activities are mainly implicit; The activities of students' learning are in front of us, which are characterized by independent learning activities. In action oriented teaching, the teaching of knowledge is not only systematic and single, but also requires teachers and students to use all kinds of knowledge they have learned. The teaching methods developed according to the idea of "behavior guidance" include: project teaching, simulation teaching, performance teaching, case teaching, role-playing teaching, etc. The teaching process is divided into five steps: information, planning, implementation, inspection and evaluation. Each step has teaching objectives, ability training, working methods and time requirements. Teachers can divide the learning content into several different learning scenes. In the planning stage, students usually search for information related to homework in the form of teamwork, and design a learning assignment page; In the implementation stage, the students completed the design and simulation according to the plan, and made relevant written records; In teaching, teachers can flexibly use projects, cases, mind mapping, brainstorming and other teaching methods. Guided by task, it has changed the traditional single knowledge structure, interdisciplinary, ability based, task oriented knowledge integration: it has changed the past classroom centered teaching process, and formed a complete teaching process consisting of six links: information collection, decision-making, planning, implementation, inspection, evaluation, etc; Student centered, students learn independently, rather than a single "indoctrination". The two-way information exchange and interaction between teachers and students enable students to obtain more sense of achievement. Figure 2 shows the teaching objectives of knowledge transfer.

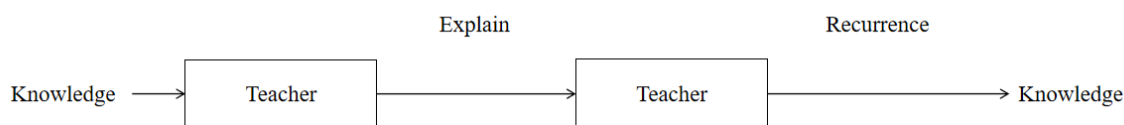


Figure 2 Teaching objectives of knowledge transfer

3. Application practice and effect of action-oriented teaching method in automobile professional teaching

3.1. Applied practice

Engine structure and maintenance is a comprehensive, practical and technical core courses for automotive majors, which involves a lot of basic theories and puts forward higher requirements for its practical application ability. Through the analysis of this course. Teachers should combine various teaching methods and implement task-based engineering teaching according to the characteristics of courses and teaching purposes. According to different courses, there are certain requirements for the knowledge and skills to be mastered. Teachers can explain in class, so as to combine theory with practice, so that students can complete the teaching purpose of the project step by step. According to the demand of college students' professional behavior ability, combined with the task analysis of automobile major, it is divided into several main links: structural function, common injuries, fault cause analysis, fault diagnosis and repair. Secondly, according to the teaching contents of different subjects, the corresponding syllabus is compiled. Teachers should plan carefully when designing homework, so that homework is comprehensive and includes multiple questions. In the teaching of each task, the teacher can present the goal, content and requirements of the task in the form of courseware or guide text, and guide the students to get all kinds of information they need. In the course of automobile engine structure and maintenance, teachers and students evaluate the completion of homework together. First, the group selected

representatives to speak, and the teacher summed up the students' speeches to further deepen the students' understanding of what they have learned. At the same time, in the process of summarization, we should strengthen the review of knowledge points summarized in class, so that students with weak learning ability can keep a close eye on the teacher's teaching progress and fully grasp the knowledge points to meet the teaching requirements. Through evaluation and summary, students' understanding of knowledge and skills can be truly reflected; Through self-evaluation, students can find problems, face up to them and find answers to them. Through learning and teachers' joint evaluation, students' interest in learning can be stimulated.

3.2. "Action-oriented" teaching effect

Through the practical guidance of automobile engine structure and maintenance, the expected effect has been achieved, which greatly improves the students' knowledge and comprehensive level, and also shows a strong adaptability to work. When students study autonomously and use behavior method, teachers are no longer the main body of teaching, but only the instructor and organizer of tasks. At the same time, teachers should encourage students to show their talents bravely and give full play to their enthusiasm. In this process, everyone should learn to cooperate rather than do it alone. Students will realize that if they want to do things well, they must have a common idea. In this way, students can feel the cultivation of team spirit. Expanding their horizons broadens students' imagination. Because there is no fixed solution, students should actively use various methods to learn more knowledge and master more knowledge. The "autonomous" behavior guidance teaching mode of automobile major has realized the transformation of "two-way interaction". With the guidance and help of teachers, students actively explore and practice, so that teachers' teaching and students' learning run through the whole process of teaching. On the basis of emphasizing discipline construction, students can choose various courses such as humanistic quality education, technology development, innovation and entrepreneurship according to their own interests and specialties to meet the needs of students' personality development. Strengthening the cultivation of humanistic quality will help cultivate college students' ability to adapt to society and sustainable development. According to the professional category, a professional oriented talent training plan has been implemented. At the same time, main and auxiliary courses have also been launched. Students in the automotive market can choose automotive maintenance, automotive electronics and other related disciplines to meet the needs of society for compound talents. Figure 3 shows the effect of action oriented teaching.

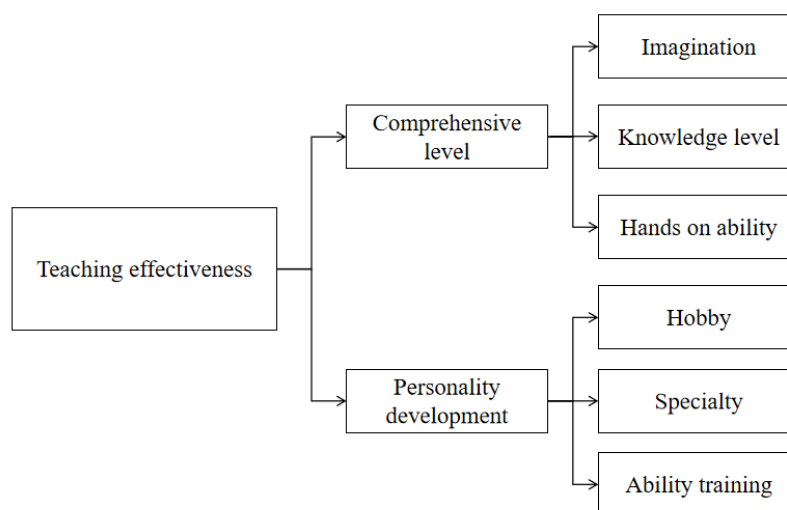


Figure 3 Schematic illustration of action-oriented effect

4. Conclusions

In a word, taking students' interests as the starting point, "problem-centered" and focusing on

cultivating students' core competence. In the whole teaching process, the subjectivity of students and the guiding role of teachers have been fully reflected. As long as teachers can fully understand and flexibly use "initiative" to improve the teaching environment, "action" teaching can play an important role in automobile professional education. With the development of economy, the training of high-tech talents is also accelerated. With the development of higher vocational colleges, vocational education can no longer meet the new development needs, and action-oriented teaching is more suitable for the development of higher vocational colleges. The application of "action-oriented" teaching method in automobile major teaching has greatly improved the teaching form, methods and methods of automobile major, and greatly improved the comprehensive quality of students. In the future teaching work, we will continue to explore, sum up experience and improve our own shortcomings, so as to meet the requirements of today's society for the overall quality and comprehensive ability of higher vocational talents.

References

- [1] Mao Jianhui. Research on Action-Oriented Teaching of Automobile Fault Diagnosis and Maintenance Course [J]. Guangdong Vocational and Technical Education and Research, 2017(4):4.
- [2] Sun Lei. The application of action-oriented teaching in the experimental teaching of automobile maintenance [J]. Vocational, 2019(8):2.
- [3] Pan Zhengjun, Lu Zhanghao. The practice of action-oriented teaching method in the teaching of "automobile maintenance and maintenance" [J]. Internal combustion engine and accessories, 2019(3):2.
- [4] Pan Zhengjun, Lu Zhanghao. The practice of action-oriented teaching method in the teaching of "automobile maintenance and maintenance" [J]. Internal Combustion Engine and Parts, 2019, 000(003):258-259.
- [5] Shen Lin, Cheng Debao, Li Yingjuan. Research on the application of action-oriented teaching method in the teaching of auto repair specialty: Taking the course "Automobile Engine Construction and Maintenance" as an example [J]. Times Auto, 2020(12):2.
- [6] Wang Ruijun. Research on the "productive" assessment method of secondary vocational auto repair specialty based on action orientation [J]. Auto Maintenance and Repair, 2018(10):3.
- [7] Shi Xiangbin. Application analysis of action-oriented method in the teaching of automobile maintenance specialty [J]. Nanfang Agricultural Machinery, 2018, 49(5):2.
- [8] Peng Jusheng. The teaching reform of automobile marketing course based on action orientation [J]. Journal of Huzhou Vocational and Technical College, 2017, 15(1):4.
- [9] Wei Qiu. Analysis of teaching reform of automobile marketing course in higher vocational colleges based on action orientation [J]. Times Auto, 2019(9):2.
- [10] Zhang Bin. Attempt and practice of action-oriented method in the reform of basic teaching of automobile mechanics [J]. Modern Vocational Education, 2018(12):2.