

Exploration of Teaching Mode Reform in Higher Vocational Mechanism Major under the Background of Diversified Student Source

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Abstract: With the reform of college entrance examination policies, various vocational colleges have formed a diverse student source structure, with uneven student sources, bringing new challenges to teaching. As one of the industries that drive the rapid development of Wenzhou's local economy, the export of skilled personnel in the machinery industry has also been highly valued. This paper takes Wenzhou Vocational and Technical College as an example to explore some ideas for the reform of the teaching mode of the mechanism major in higher vocational colleges under the background of diverse student sources by analyzing the situation of student sources and the problems existing in the teaching mode of the mechanism major in Rui'an College in the past five years.

Keywords: Higher vocational education, Major in mechanism, Diversified source of students, Teaching mode.

1. Introduction

Vocational education is an important foundation for cultivating skilled personnel and promoting the level of manufacturing and service in China.[1] In recent years, the recruitment and examination system of higher vocational education has been continuously innovated, and the diversified selection mechanism has led to the diversification of college student sources, forming a coexistence situation of multiple student sources such as regular enrollment, early enrollment, individual enrollment, "3+2", "2+3" secondary vocational joint training, and further complicating the academic situation. In order to adapt to this change and improve teaching quality, higher vocational colleges need to actively explore diverse teaching and training paths, formulate diverse talent training programs, and promote high-quality development of students.

2. Student Source Structure

2.1. Student Source Type Description

The term "general high school enrollment" refers to the enrollment of students for ordinary high schools, who are enrolled through the college entrance examination. Early enrollment refers to the direct admission of students from ordinary high schools through interviews or written exams organized by the school itself. The five-year consistent student source refers to the enrollment model of jointly running schools with secondary vocational schools. Students need to study for corresponding years in secondary vocational schools, and pass the academic examination in secondary vocational schools. The source of students for independent examinations refers to vocational high schools that have been admitted through the form of cultural and skills examinations organized by the province. They can be divided into mechanical, computer class, business, and other categories.

2.2. Current situation of student sources

As the south gate of the school's distributed education, Rui'an College actively adopts multiple ways to recruit

students and meet the talent needs of local enterprises. As a counterpart specialty in the automotive and motorcycle parts industry of Ruian, the mechanism specialty has cultivated a batch of skilled talents for the local area. The enrollment plans for various student sources in the past five years are shown in Figure 1.

Year	2018	2019	2020	2021	2022	Total
Individual enrollment	0	90	0	0	0	90
Early enrollment	40	40	45	0	40	165
Early enrollment	0	0	40	0	0	40
3+2 enrollment	0	0	0	66	84	150
2+3 enrollment	30	79	0	0	0	109
Total	70	209	85	66	124	554

Figure 1. Statistical Table of Enrollment Plan of Mechanized Major in Rui'an Campus in the Last Five Years

From Figure 1, it can be seen that the enrollment types of mechanism majors in Rui'an Campus in the past five years have shown an uneven distribution, with different types of students from different grades. Since 2020, there have been at least 3-4 source types of students in three grades, and different source types have brought new challenges to talent cultivation and teaching models.

3. Current Situation of Teaching Mode for Mechanism Major

3.1. The basic theoretical knowledge is not solid, and the skill operation is not skilled.

Practical operation requires a solid theoretical foundation as a reserve. For students of mechanisms, theoretical knowledge is not only logical, but also abstract in description. Students will have difficulty understanding knowledge points and lack interest in learning, resulting in learning skills that cannot be effectively grasped, and teaching effects are not very ideal. There are no fewer students who fail theoretical courses [2]. "The theory is not well learned, and practical exercises are difficult to carry out. Most students can only master some simple operations.". Moreover, due to the lack

of training equipment in schools, students' opportunities for practical exercises are also reduced, and skills are not exercised, making it more difficult for students to master operational skills.

3.2. The professional curriculum is repetitive and deviates from the actual needs of students.

On the one hand, there is a duplication of curriculum titles in secondary and higher vocational schools, and many of the knowledge learned in secondary and higher vocational schools will be learned again in higher vocational schools. On the other hand, in the professional curriculum, not only are the course names similar, but also the course content is similar, often with duplicate knowledge points. There is a significant gap in skills and knowledge reserves between students from secondary vocational schools and general high schools. The former has already studied professional courses during their senior years, and for them, their ability to learn professional courses after entering university should be higher than the latter. This requires us to classify the degree of difficulty of the curriculum and fully distinguish the level of students.

3.3. The employment path for graduates is single, and the professionalization channels are not smooth.

The purpose of vocational education is to enable students to master a survival skill, serve enterprise production after entering social work, and achieve self worth in life. In fact, this is not the case. Many students majoring in mechanical engineering have engaged in other industries after graduation, due to their poor technical level and weak theoretical knowledge. Therefore, it is difficult to complete tasks alone when entering society. One phenomenon caused by this is that graduates are not competent for jobs with high technical difficulties, while the workshop work on the one hand lacks challenges, salaries are not high, and graduates lack interest. Whether high or low is a common phenomenon for graduates of mechanical engineering majors after graduation, which is not conducive to the development of students' career paths.

4. Teaching Mode Reform Based on Diverse Student Sources

4.1. Attach importance to basic teaching, strengthen practical teaching, and correctly handle the relationship between the two.

Mechanism major is a systematic discipline that requires not only solid theoretical knowledge, but also proficiency in practical operations. Only in this way can it meet the rapidly changing development needs of the intelligent manufacturing industry. Therefore, teachers in colleges and universities should actively integrate modern teaching equipment into the teaching activities of mechanical engineering majors, constantly enrich teaching resources, and cultivate students' interest in learning. [3] Theory and practical teaching complement each other, and correctly handling the relationship between them is the internal driving force for the sustainable development of the mechanism major, and is also one of the important influencing factors for the healthy development of higher vocational education and teaching.

4.2. Implement classified teaching based on individual differences and development needs of students.

Students from different sources should be classified and cultivated in terms of curriculum module settings and the degree of difficulty in the curriculum. For students from secondary vocational schools, the credit system exchange system for professional courses can effectively avoid repetitive learning of courses. During the implementation process, it is necessary to ensure the consistency of the evaluation criteria, ensure that the difficulty of the curriculum is at the same level, and ensure the teaching quality of students.[4] For students from general high schools, professional courses are relatively blank, and it is necessary to optimize the study of professional theoretical courses and practical courses, set a reasonable proportion, and improve the professional level of students.

4.3. Provide multiple platforms to encourage students to actively participate in practical teaching.

In their spare time, students can actively participate in practical activities through various channels to cultivate their personal abilities and improve their skills. Practicing skills can be trained through "simulated training" in the first classroom on campus; You can also participate in real production practice in enterprises through summer social practice in the second course to understand the nature, content, and characteristics of work; You can also improve your practical skills by participating in the competition class of the third professional interest class on campus. Cooperate with enterprises in running schools, establish an order class model, allow students to enter the enterprise in advance for internships, hold graduation season job fairs and special lectures, and provide students with a multi-dimensional internship platform.

5. Conclusion

Under the background of diverse student sources, the reform of the teaching mode of mechanism specialty is an urgent need for talent cultivation. This paper, while analyzing the shortcomings of the teaching model for mechanism majors, combines the shortcomings of traditional teaching models, and proposes teaching model reform suggestions from three aspects: the combination of theoretical and practical courses, the classification of professional courses, and the broadening of employment channels. It aims to further improve the level of education, output high-quality skilled talents, and actively promote the development of regional industries.

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