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Research and Practice on the Reform of Practical Training for Field Engineers in Mold Design and Manufacturing Majors in Higher Vocational Education

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Abstract: This article aims to study and explore the reform issues of practical training for on-site engineers majoring in mold design and manufacturing in vocational colleges. By analyzing the relevant background and needs, an innovative practical training plan is proposed, and the effectiveness of this plan in practical application is explored. This practical training program has positive significance in improving students' practical operation ability, meeting enterprise needs, and promoting industry university cooperation. This study provides certain reference value for the practical training of on-site engineers in the field of mold design and manufacturing in vocational colleges.

Keywords: Vocational mold design and manufacturing major; On-site engineer; And enterprise practical training

Introduction

With the continuous development of the manufacturing industry, on-site engineers specializing in mold design and manufacturing in vocational colleges play an important role in enterprises. However, traditional education models have certain shortcomings in cultivating students' practical operational abilities and adapting to the needs of enterprises. Therefore, exploring how to reform practical training to better meet the talent needs of enterprises has become an important issue at present.

1. Background and needs for practical training

1.1 The importance of the role of on-site engineers

The rapid development of modern manufacturing industry has put forward higher requirements for on-site engineers majoring in mold design and manufacturing in vocational colleges. On site engineers play a crucial role in the production process, responsible for solving technical difficulties in actual production, coordinating the workflow of various links, and ensuring product quality and production efficiency. They need to possess profound professional knowledge, proficient technical operation skills, and good teamwork and communication skills. However, traditional classroom education is difficult to meet the diverse and complex needs of real work, which requires us to carry out practical training reforms.

1.2 Problems in Traditional Education Models

The traditional classroom education model mainly focuses on imparting theoretical knowledge and lacks the cultivation of practical operational skills. In practical work, on-site engineers need quick reaction ability and practical problem-solving ability, which are often accumulated through practical operation and practical experience. However, traditional education models often overlook this, resulting in students often being unable to quickly adapt to the needs of the workplace after graduation. In addition, mold design and manufacturing involve comprehensive knowledge from multiple disciplines, while traditional education models often have a single disciplinary division, which cannot cultivate students' comprehensive qualities and interdisciplinary abilities[1].

In addition, due to the continuous development of the manufacturing industry and rapid technological updates, traditional textbooks may not be able to keep up with the latest processes and technologies in a timely manner. This requires us to pay more attention to practical training, allowing students to be exposed to the latest equipment, processes, and practical applications, in order

to better meet the needs of enterprises.

2. Innovative practical training plan

2.1 Project driven practical training mode

The project-driven practical training model, as an innovative educational method, has shown great potential in the training of on-site engineers in the field of mold design and manufacturing in vocational colleges. Traditional classroom teaching often focuses on imparting theoretical knowledge, but lacks exploration and resolution of practical problems. The project-driven practical training model places students in a real engineering project environment. By participating in various stages of project planning, design, manufacturing, and implementation, students can gain a deep understanding of the actual engineering operation process, cultivate practical problem-solving skills, and teamwork spirit[2].

2.2 Introduction of Enterprise Mentor System

In order to better connect education with practical work needs, the introduction of the corporate mentor system has become an important part of the practical training program. Corporate mentors are professionals from relevant industries who have rich practical work experience and industry knowledge. By introducing corporate mentors to the campus, students can have closer contact with the real work environment, understand the latest industry trends and actual needs.

Corporate mentors can not only provide professional guidance and advice to students, but also help them build bridges for cooperation with enterprises. Students can participate in practical projects under the guidance of corporate mentors, understand the workflow and business models of the enterprise, and better apply the knowledge they have learned to practical work. At the same time, corporate mentors can also provide timely feedback on students' performance, help schools adjust curriculum and practical training plans, and ensure that the trained students better meet the needs of the industry.

By introducing the corporate mentor system, the connection between students and enterprises is strengthened, and students can have a deeper understanding of the current situation and future development direction of the industry. This not only helps to improve students' professional literacy, but also provides broader space for their employment and career development.

The introduction of project-driven practical training mode and enterprise mentor system provides innovative directions for the training of on-site engineers in the field of mold design and manufacturing in vocational colleges. Through project practice, students can better apply theoretical knowledge to practical engineering and cultivate the ability to solve practical problems; Introducing corporate mentors can better connect schools and businesses, provide practical work experience and industry dynamics, and help students better integrate into the professional field. These two innovations have jointly promoted the reform and development of the practical training mode for on-site engineers in the field of mold design and manufacturing in vocational colleges[3].

3. Evaluation of the effectiveness of practical training programs

3.1 Improvement of students' practical operation ability

Under the traditional education model, students majoring in mold design and manufacturing in vocational colleges often focus more on learning theoretical knowledge and lack the cultivation of practical operational abilities. However, with the continuous development of the manufacturing industry, the demand for on-site engineers in enterprises is no longer limited to theoretical knowledge, but more emphasis is placed on their practical operational skills. Therefore, this practical training program focuses on improving students' practical operation abilities to better adapt to the real work environment.

In order to improve students' practical operational abilities, we have adjusted the curriculum on the one hand. In the course, a large number of practical operation links have been added, such as mold processing, assembly, debugging, etc. These practical tasks not only help students master practical skills, but also cultivate their ability to solve practical problems. At the same time, we have introduced a simulation training platform to enable students to conduct practical operations in mold design and manufacturing in a virtual environment, in order to familiarize themselves with the actual workflow in advance[4].

3.2 Strengthening the Cooperation between Industry and Education

The practical training plan not only focuses on the cultivation of students' individual abilities, but also emphasizes the importance of industry university cooperation. The demand for talent in modern manufacturing is no longer limited to theoretical knowledge, but rather focuses on whether students have practical application abilities and understand the actual needs of the industry. Therefore, industry university cooperation has become an indispensable part of the practical training of mold design and manufacturing majors in vocational colleges.

By establishing a close cooperative relationship with enterprises, this practical training program aims to better integrate students

into the actual work environment. We have reached cooperation agreements with multiple mold manufacturing companies to provide students with internship and project practice opportunities. Students are able to participate in design, manufacturing, testing, and other aspects of practical engineering projects in enterprises, apply classroom knowledge to practical engineering, and work closely with enterprise engineers[5].

In addition, we also regularly hold industry university exchange activities. Enterprise engineers regularly come to the school for lectures and training, sharing the latest industry trends and practical cases. Students have the opportunity to ask questions, exchange experiences, and establish connections with corporate engineers. This kind of communication not only enriches students' practical knowledge, but also expands their career horizons and prepares them for future employment[6-7].

4. Conclusion

This article explores the reform research and practice of practical training for on-site engineers majoring in mold design and manufacturing in vocational colleges. The innovative practical training program has achieved positive results in improving students' practical skills and promoting industry school cooperation. However, in order to achieve sustainable development of practical training, it is still necessary to continuously explore and innovate in aspects such as school enterprise cooperation mechanisms and training content. In the future, international exchanges and cooperation should be continuously expanded to promote the practical training mode of mold design and manufacturing in vocational colleges and enhance its influence at the international level.

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