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Research on the Reform of Higher Vocational English Teaching Based on the Needs of Machinery Processing Enterprises

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Abstract: This research focuses on English application scenarios in production, management, foreign trade and other links of machinery processing enterprises. By analyzing the gap between the current higher vocational English teaching content and the actual needs of the industry, it proposes targeted strategies for adjusting curriculum modules and optimizing teaching methods. the aim is to make higher vocational English teaching more in line with the career development needs of mechanical major students and cultivate mechanical industry talents with practical English competence.

Keywords: Machinery Processing Enterprise Needs; Higher Vocational English Teaching; Teaching Reform

1. Introduction

With the in-depth development of economic globalization, the internationalization of the machinery manufacturing industry has been continuously enhanced. English proficiency has become an indispensable professional skill for practitioners in the machinery industry. However, the current higher vocational English teaching is disconnected from the actual needs of the industry, making it difficult for students to quickly adapt to English application scenarios in the workplace after graduation. Therefore, carrying out the reform of higher vocational English teaching based on the needs of machinery processing enterprises has important practical significance.

2. Analysis of English Application Scenarios in Machinery Processing Enterprises

2.1 Production Links

In modern machinery processing enterprises, a large number of advanced mechanical equipment are imported from abroad, and the operation manuals and other documents for these devices are mostly written in English. For example, commissioning manuals for automated production lines all require operators to have a certain level of English reading ability to accurately understand the equipment's operation specifications and technical requirements. In addition, some internationally accepted mechanical manufacturing standards and process flow descriptions are often in English. Technical personnel need to read English materials to master the latest production technologies and quality control requirements.

2.2 Management Links

In terms of enterprise management, cross-border cooperation in machinery processing enterprises has become increasingly frequent, and internal management documents, meeting materials, project reports, etc., may involve English. For instance, English documents related to international quality management system certification. Managers need to have good English reading and writing skills to communicate and collaborate effectively with international peers and formulate reasonable corporate development strategies.

2.3 Foreign Trade Links

In foreign trade business, the application of English is more extensive and in-depth. English is indispensable from communication with foreign customers to business negotiations and contract signing. Sales personnel need to use English to accurately introduce the performance, characteristics, and advantages of products and answer customers' questions; purchasing personnel need to negotiate prices, confirm orders, and discuss delivery dates with foreign suppliers in English.

3. Gaps Between Current Higher Vocational English Teaching and Industry Needs

3.1 In Terms of Teaching Content

At present, the content of most higher vocational English textbooks focuses on the imparting of general English knowledge, with little integration of mechanical professional knowledge. There is a significant gap between the English content students learn in class and the English actually used in future work in machinery processing enterprises. For example, students may master a large number of English vocabulary and expressions for daily scenarios, but they know little about English instructions for equipment operation, making it difficult to meet the actual needs in work.

3.2 In Terms of Teaching Methods

Traditional higher vocational English teaching methods are dominated by teachers' lectures, where students passively receive knowledge. In the teaching process, real cases from machinery processing enterprises are rarely introduced for situational simulation teaching. Students lack opportunities to use English in actual work scenarios, leading to weak English application abilities, especially in oral expression and practical communication.

3.3 In Terms of Teaching Staff

Some higher vocational English teachers lack practical experience in the machinery industry and have insufficient in-depth understanding of the English application scenarios and actual needs of machinery processing enterprises. In the teaching process, it is difficult for teachers to organically integrate mechanical professional knowledge with English teaching, and they cannot provide students with teaching content and guidance. At the same time, due to the lack of practical ability of teachers themselves, there are certain limitations in carrying out practical teaching activities.

4. Strategies for Higher Vocational English Teaching Reform Based on the Needs of Machinery Processing Enterprises

4.1 Adjusting Curriculum Modules

4.1.1 Adding Modules for Practical Mechanical English Writing: Practical mechanical English writing is one of the commonly used skills for mechanical major students in their work, such as writing English product manuals and contracts. In the curriculum, teachers should systematically explain the writing standards, format requirements, and common expression methods of practical mechanical English texts. Through a large number of case analyses and writing exercises, students can master the writing skills for different types of practical documents. For example, in the teaching of English product manual writing, teachers can select manuals of well-known domestic and foreign mechanical products as cases, analyze their structure and language characteristics, guide students to imitate and practice writing.

4.1.2Offering Courses on Interpreting English Instructions for Equipment Operation: In response to the fact that equipment operation manuals and instructions in the production links of machinery processing enterprises are mostly in English, courses on interpreting English instructions for equipment operation should be offered. the course content covers English operation interfaces of common mechanical equipment, operation process descriptions, and fault code interpretations. By explaining mechanical professional terminology, grammatical structures, and common expression methods, combined with actual equipment operation cases, students can learn to accurately understand and execute English equipment operation instructions. For instance, English operation manuals of automated production lines can be introduced into the course, allowing students to conduct simulated operation exercises and enhancing their ability to use English to solve problems in actual work scenarios.

4.1.3Strengthening Listening and Speaking Training in Mechanical Professional English: On the basis of the original English courses, add content for listening and speaking training in mechanical professional English. Select listening materials related to the mechanical industry, such as product introduction videos and business negotiation dialogues. Through listening exercises, students' listening comprehension ability of mechanical professional English can be improved. At the same time, set up oral practice sessions, such as simulating scenarios of product introduction, and let students perform role-plays to exercise their oral expression and communication skills. In addition, tools such as voice software and online English learning platforms can be used to provide students with more listening and speaking practice opportunities.

4.2 Optimizing Teaching Methods

4.2.1 Introducing Real Cases for Situational Simulation Teaching: Collect actual English application cases from machinery processing enterprises in production, management, foreign trade, and other links and introduce these cases into classroom teaching. Through situational simulation, students play different roles to communicate and solve problems in English. For example, in simulating cross-border order communication, students act as domestic salespersons and foreign customers respectively, practicing English dialogues in links like product quotation, order confirmation, and after-sales service. This allows students to experience real work scenarios in practice, improving their English application ability and ability to deal with practical problems.

4.2.2 Adopting Project-Based Teaching Method: Carry out project-based teaching with actual projects in the machinery industry as carriers. Teachers can divide students into groups, with each group responsible for a project. During project implementation, students need to use English to complete tasks in all links, including project planning, data collection, scheme design, and result presentation. For instance, in the simulated international machinery exhibition project, student groups need to write product promotional materials in English, design booth layouts, and conduct exhibition explanations. By completing project tasks, students' teamwork ability, comprehensive English application ability, and professional literacy are cultivated.

4.2.3Using Modern Information Technology for Teaching: Make full use of modern information technology, such as multimedia teaching equipment, online learning platforms, and virtual simulation technology, to enrich teaching resources and methods. For example, teachers can create mechanical English teaching courseware to vividly display mechanical English knowledge and application scenarios; use online learning platforms to provide students with abundant learning resources; and rely on virtual simulation technology to simulate real working environments and English application scenarios in machinery processing enterprises, allowing students to conduct practical operations and English application exercises in a virtual environment.

4.3 Strengthening the Construction of Teaching Staff

4.3.1 Organizing Teachers to Participate in Practical Training in the Machinery Industry: Schools should actively arrange English teachers to participate in practical training in the machinery industry, enabling them to go deep into the frontlines of machinery processing enterprises, understand the production processes, management models, and English application scenarios of these enterprises, and accumulate practical experience. Through such practical training, teachers can better integrate mechanical professional knowledge with English teaching, improving the pertinence and practicality of teaching.

4.3.2Carrying Out Interdisciplinary Communication and Cooperation on Campus: Encourage English teachers to conduct interdisciplinary communication and cooperation with mechanical professional teachers to jointly develop curriculum resources and design teaching plans. For instance, English teachers and mechanical professional teachers can collaborate to compile mechanical English textbooks, organically integrating mechanical professional knowledge with English language knowledge; they can jointly design teaching projects and practical activities, allowing students to gain a deeper understanding of mechanical professional knowledge while learning English, thereby improving students' comprehensive professional abilities.

4.3.3Introducing English Talents with a Background in the Machinery Industry: Schools can introduce English talents with a background in the machinery industry to enrich the teaching staff. These teachers not only have a solid foundation in English language but also are familiar with machinery industry knowledge and English application scenarios, bringing new concepts and methods to teaching. For example, recruit technical personnel with rich experience in English application from machinery processing enterprises as part-time teachers. Through their teaching and guidance, students' English application ability and professional competitiveness can be improved.

5. Conclusion

Carrying out the reform of higher vocational English teaching based on the needs of machinery processing enterprises is an inevitable requirement to adapt to the international development of the machinery industry and an important way to improve the professional abilities of students majoring in mechanical

engineering. In future teaching practice, attention should continue to be paid to industry development trends and changes in enterprise needs, with sustained promotion of higher vocational English teaching reform, continuous improvement of the teaching system and methods, and enhancement of teaching quality and talent training level.

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