

Industry-Specific English Textbooks for the School-Based Curriculum under the "Dual Elements" Education Model of Industry and Education Integration

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Keywords: Industry-Education Integration, Higher Vocational Education, Industry English, School-Based Textbooks

Abstract: In the context of the integration of industry and education, this article analyzes the necessity and value of building industry-specific English textbooks for the automotive new energy technology major. Based on corporate research and student demand surveys, three measures that are conducive to the construction of industry-specific English textbooks are summarized: jointly writing textbooks with enterprises based on corporate research and student surveys, standard leading, integrating course certification, and creating modular workbooks and three-dimensional new forms of textbooks. Based on the integration of industry and education, the industry-specific English textbooks jointly built by schools and enterprises are oriented towards practical job positions, constructing real workplace scenarios and integrating job skills, language proficiency, and professional ethics. This allows students to develop comprehensive ability to use English to solve practical problems in real work tasks.

1. Introduction

The level of national education determines its level of scientific and technological development and innovation capability. Only high-quality education can continuously provide high-quality talents for the construction and development of modern society. Vocational education is a key driver of local economic development, as it trains a large number of high-quality laborers and high-skilled professionals for various industries. In today's world, vocational education has received much attention, and industrial-education integration is a required course for vocational education workers. It helps to improve the professional teaching resource library, establish resource certification standards, and trading mechanisms for co-building and sharing platforms, and further expand the coverage of high-quality resources[1-2]. However, we have found that most of the research on industry-education integration focuses on its connotation, system, and strategy, but there is little development or construction of school-based teaching materials for industries and positions. Therefore, it cannot truly achieve school-enterprise precise docking and precise education on the level of teaching content. The "three education" reform clearly states that textbooks are the foundation, and only by reforming textbooks can teaching carriers be reformed, thus achieving integration of production and education, and combining industry with academics in teaching content. School-based teaching materials, combined with enterprise needs, based on job skills, and developed specifically for the characteristics of the school's students, have forward-looking and practical importance. Therefore, the development of industry-specific English school-based teaching materials has far-reaching significance.

"High-voltage safety course on electric vehicle production site" is a core course in the vocational education of new energy vehicle majors. This course not only teaches knowledge of the high-voltage circuit of electric vehicles but also cultivates students' safety awareness in the production site of electric vehicles[3]. However, there is currently a lack of industry-specific English teaching materials for this course, which leads to students being unable to complete work tasks due to the

lack of job-specific English knowledge. In order to meet the actual job requirements of students and the international development of the school, developing school-based teaching materials in industry-specific English for new energy vehicle majors would have positive significance.

2. The Necessity of Developing School-Based Industry-Specific English Teaching Materials

2.1. Realizing the reform of the "three educations" in vocational education

Only through the integration of industry and education can we promote the interconnected and mutual development of education-oriented priority, talent-driven development, innovative industrial development, and high-quality economic development. Vocational colleges should establish multi-level and multi-directional collaborations with enterprises, enabling the organic integration of industry and education[4]. At the same time, the internationalization of vocational education has also received widespread attention from all walks of life. Therefore, in the context of the rapid development of the new energy vehicle industry, it is urgent to develop a school-based English textbook for high vocational new energy vehicle technology majors that integrates practicality, pertinence, professionalism, and contemporariness.

2.2. Meeting the talent needs of enterprises' job positions

Vocational education should serve the economic and social development of the region, providing enterprises with highly skilled, high-level, and high-quality technical personnel. The development of English textbooks for vocational schools aims to cultivate international, composite, and innovative talents that meet the needs of enterprises. Therefore, the development of industry-specific English textbooks can meet the requirements of enterprises for students' knowledge, skills, and emotions. Industry-specific English textbooks will achieve consistency between the knowledge, skills, and emotional goals and the actual work goals, as well as the consistency between the teaching process and the work process. Therefore, developing such a textbook can cultivate students' international vision, professional practice ability, innovation capability, and self-learning ability. This improves the ability of vocational colleges to serve the local economic and social development.

2.3. Enriching the textbooks and courses

Currently, industry-specific English textbooks have relatively vague and untargeted content, which is not highly integrated with enterprises. This leads to dull industry-specific English courses that cannot meet the personalized, professional, and international needs of students in the new energy automotive industry. The industry-specific English textbooks available on the market have relatively outdated content that has not kept up with the development of new energy technologies, and their content is not matched with enterprise facilities and equipment. Teachers can only use traditional teaching methods that do not reflect a student-centered classroom. Therefore, traditional textbooks limit the refinement of industry-specific English course teaching [5]. However, a school-based industry-specific English textbook based on the integration of industry and education and the combination of theory and practice can achieve task-based teaching, project-based teaching, situational teaching, and information-based teaching. This can change the traditional rote teaching in industry-specific English courses, fully tapping into students' subjective initiative and letting them learn by doing.

2.4. Meeting the demand for high-quality textbooks for the teacher's teaching ability competition

The National Vocational College Skills Competition and Teachers' Teaching Skills Competition can effectively improve the teaching quality of teachers and provide high-quality teaching. The Teachers' Teaching Skills Competition requires participating teachers to have excellent teaching designs, as well as teaching content that is synchronized with the development of the times and the industry. This requires teachers to develop typical job tasks and assign precise learning content according to vocational positions. Without a school-enterprise integrated textbook that fully

integrates job responsibilities and learning content, it is impossible to complete high-quality teaching designs. Therefore, industry-specific English textbooks based on school-enterprise integration are urgently needed for participating teachers.

3. The value of the construction of Trade English school-based teaching materials

3.1. Update the idea of compiling school-based textbooks for industrial English

The guiding principles for developing industry-specific English textbooks for schools are the integration of industry and education and the collaboration between schools and enterprises. Firstly, to fulfill the fundamental mission of moral education and fully utilize the educational functions of textbooks, the curriculum aims to cultivate the students' comprehensive abilities. Therefore, when developing the textbooks, it is necessary to not only focus on professional knowledge and skills but also pay attention to the ideological and political education elements contained in the course[4]. The textbooks should integrate the ideological and political education into the content of textbooks and other teaching resources, forming a fusion of knowledge, skills, and ideological education.

Secondly, the textbooks should be based on the occupational skills standards, the national professional teaching standards, and the student-oriented education philosophy. The curriculum content needs to be reconstructed to analyze the characteristics of student learning. The textbook plans to incorporate bilingual content on topics such as enterprise fire safety, electric vehicle high-voltage safety, and enterprise safety education cards.

Finally, based on the principles of language learning rules and characteristics, the textbook aims to gradually improve students' language skills.

3.2. Deepen cooperation between schools and enterprises and build a platform for mutual assistance

In 2022, the Ministry of Education issued a notice on implementing an action plan to enhance the abilities of vocational education teachers, which explicitly states that "we need to facilitate bi-directional flow of teachers between vocational schools and enterprises, encourage vocational teachers to conduct adjustment and supplementation through practical experience in enterprises and mobilize more training obligations for enterprises to form a joint partnership among government, schools, and enterprises." Therefore, it is necessary to actively construct a multi-party integrated platform for mutual assistance in school-enterprise development. This requires vocational teachers to actively visit enterprises for research and learning, understand the specific production positions and English language requirements of enterprises, and adhere to the principle of "leaving the campus and entering the enterprises" to learn about the cutting-edge technologies used in enterprises and continually changing job-specific language requirements[5]. Based on the English language requirements of the job, the corresponding teaching content is designed. During the writing process, teachers should actively adopt suggestions from enterprise personnel for revision and guidance.

3.3. Promote the reform of industrial English teaching

With the development of new energy vehicle technology, in order to effectively integrate textbook development with the actual situation of enterprises, the contents of industry English textbooks and the achievements of industry technology development should be synchronized. Teachers can impart the latest technology and language knowledge to students, as well as understand the actual production dynamics of current enterprises and grasp their real job requirements. Such textbooks can integrate professional knowledge, vocational skills, and language knowledge, allowing students to learn theoretical knowledge in class, practice English skills in practical training courses, and verify their achievements in internships. Textbooks containing professionalism and advanced content can stimulate students' learning interests, change their learning attitudes, and help teachers continuously improve, thereby improving the quality of English language teaching in the industry and promoting reforms in industry English teaching.

4. A Study on the Construction of school-based teaching Materials of "Trade English"

4.1. Based on enterprise survey and student questionnaire analysis, the school and enterprise jointly compile teaching materials

Teaching materials are not only the basic tools for professional teachers to carry out teaching, but also the important carrier for students to master theoretical knowledge, exercise core competence and form post literacy. School-based teaching materials for industrial English are not limited to dull language knowledge and language skills, but should combine language knowledge with the most cutting-edge technical knowledge of enterprises and combine language skills with the latest post responsibilities. School-based trade English textbooks should also be convenient for professional teachers to carry out teaching design and implementation. At the same time to meet the needs of individual development and diverse interests of students. Therefore, in view of the high-pressure safety course of electric vehicle production site, according to the talent training program of new energy vehicle technology major, through the survey of enterprise positions, interviews with enterprise personnel, observation of enterprise environment and questionnaire analysis of students' interests, the development of school-based teaching materials for industrial English is discussed.

Firstly, enterprise personnel and on-campus teachers have had multiple discussions to reconstruct the framework of the industry English textbook. The school's teachers should effectively enter enterprises and fully discuss with enterprise experts, break the chapter settings of the original discipline system, reorganize the modules of this course, refer to the talent training plan and vocational skill training objectives of this major, and determine the teaching content and teaching outline. After determining the outline, the specific personnel of the writing team should be determined. The members of the textbook writing team should include frontline technical experts from enterprises, on-campus professional backbone teachers, and on-campus English backbone teachers. The complementary advantages of the members should be reasonable, reflecting the professionalism of the textbook content and close to actual job positions, and reflecting the educational aspect by integrating diverse course ideological and political contents[1,7].

Secondly, we accept the suggestions of frontline technical experts from enterprises and construct a "module-typical work task-subtask" textbook template. Combined with the characteristics of the task, we develop accompanying resources such as teaching material sheets, animations, videos, etc. Fully leveraging the students' role as the main body, students participate in and complete various tasks to achieve the three-dimensional objectives. Taking the module of safety protection and tool equipment usage for new energy vehicles as an example, we design a "look for the task" to allow students to identify safety protection equipment and recognize the English words for safety protection tools in numerous English words. Through completing the task, students master the English vocabulary of safety protection and tool devices for new energy vehicles, achieving the knowledge objective. We design a "speaking task" to allow students to explain how to use these safety protection and tool devices in English. This task exercises the students' ability to practically use English in a work scenario, achieving the ability objective. We should also design a "watching task" to allow students to watch English videos and understand the importance of safety protection for new energy vehicles. This task cultivates students' safety awareness and good professional ethics, achieving the quality objective[4,6]. At the same time, we will introduce actual enterprise cases as carriers, combining curriculum standards, enterprise standards, and various competition standards to determine the overall framework of the teaching materials. According to the overall framework, the school's English backbone teachers complete the initial draft of the teaching materials, while professional teachers from the school and technical experts from enterprises guide and modify the content of the teaching materials at a professional level.

Thirdly, to meet the students' textbook needs, a questionnaire survey is necessary. In order to get a deeper understanding of the students' textbook needs, the following five questions should be designed using the questionnaire: 1) How do you prefer the distribution of theoretical knowledge and practical training knowledge in industry English textbooks? 2) In what ways do you prefer the presentation of knowledge in industry English textbooks? 3) Do you think it is necessary to

incorporate digital teaching resources into the textbooks to make the presentation of knowledge more diverse? 4) How would you like the content of the industry English textbooks to be arranged? 5) In what form do you want the industry English textbooks to be designed?

Fourthly, coordinate multiple resources. The development of industry-specific English textbooks should involve resources from the school, enterprises, the local community, and even international sources. The content of the textbooks should primarily be drawn from the frontlines of production and service in enterprises, with a focus on cutting-edge domestic and international technology. Various media resources must be created to support information-based teaching, as well as blended learning that combines online and offline approaches.

4.2. Standard leading, class card accommodation

According to the national occupational standards for automotive mechanics, there are five levels of automotive mechanics. The conditions for application, job functions, and corresponding work content are different for each level, and the skill requirements also vary. When developing textbooks, teachers should ensure that the language knowledge and language skills required for entry-level, intermediate-level, and advanced-level workers are reflected in the books. Secondly, teachers should work with enterprises to develop language knowledge and skills that personnel should master for different qualification levels, aiming to accurately match job requirements and develop a corresponding set of skill requirements based on job positions and work processes, as well as the corresponding facility and equipment operation requirements for different levels. At the same time, the textbook should be aligned with the 1+X vocational skills level standard, fully integrating the high-quality resources of enterprises, introducing new automotive technologies, and creating skill matrices and modular content systems that reflect the relatively independent characteristics of different levels. By introducing real-life examples and designing task content oriented towards job skills, support for modular teaching can be provided, and the characteristics of vocational education that reflects the integration of theory and practice[7]. The industry-specific English textbooks should adhere to the design concept of highlighting applications, serving enterprises, and driving development, creating realistic workplace scenarios, guiding students to produce high-quality output efficiently, and focusing on achieving results.

4.3. Compilation of loose-leaf worksheet - type teaching materials, three-dimensional new form teaching materials

According to the "Action Plan for Improving the Quality of Vocational Education (2020-2023)" jointly issued by nine departments including the Ministry of Education in 2020, it is required to "innovate teaching material forms according to the characteristics of vocational school students, and promote the use of scientific, rigorous, easy-to-understand, image-rich, and diverse forms of loose-leaf, work manual, and integrated media teaching materials." Therefore, industry-specific English textbooks should also actively try the form of work manuals. By presenting problems through work manuals, guiding through questions and cases, designing open-ended problems, and exercising students' logical thinking abilities, students can learn with clear goals while carrying out active problem-solving. Loose-leaf teaching materials follow the cognitive laws of students and can stimulate their interest in learning. In addition, loose-leaf teaching materials are conducive to real-time updates and improvements to the teaching materials.

5. Conclusion

The construction of vocational college industry-specific English textbooks fully embodies the three reforms of vocational education and is also an important means to improve the quality of industry-specific English curriculum teaching. Under the mode of running schools with the integration of industry and education, industry-specific English textbooks can be more closely related to actual enterprise positions in terms of content, with more diverse and rich presentation forms and scientific arrangement methods. Therefore, industry-specific English textbooks can stimulate students' learning enthusiasm and help cultivate high-quality technical talents.

Acknowledgement

This article is a research result of the Key Project "Research on the Development of Industry-specific English Textbooks Based on the "School-Enterprise Dual-Element" Education Model under the Integration of Industry and Education" (Project Approval Number: WYJZW-2021-1005) of the Teaching Guidance Committee for Foreign Language Majors in Vocational Colleges under the Ministry of Education in 2021.

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