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New Energy Vehicle Professional English and the Cross-Cultural Dissemination of Teaching Resources in the Context of "Vocational Education Goes Abroad"

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Abstract: "Vocational education goes abroad" promotes China's vocational education from resource export to the comprehensive dissemination of standards, curricula, technology and culture. The new energy vehicle major has the characteristics of fast technological renewal, strong job practice, and high demand for international cooperation. The cross-cultural dissemination of professional English and teaching resources directly affects overseas learners' understanding of China's vocational education model and industrial technology. At present, there is still a problem of insufficient adaptation of professional English resources for new energy vehicles in terms of terminology expression, case selection, classroom organisation, etc., which is easy to cause deviation in learning understanding and weakening of teaching effect. Based on this, the article analyses the practical value, practical problems and optimisation path of the dissemination of professional English resources of new energy vehicles, and proposes that the quality of communication should be improved in terms of collaborative development team construction, terminology library construction, integrated adaptation of teaching resources, and integration of job tasks, so that teaching resources can not only reflect China's new energy The advantages of the automobile industry can also adapt to the language foundation, cultural habits and job needs of students from different countries.

Keywords: Vocational education abroad; new energy vehicle major; professional English; teaching resources; cross-cultural communication.

1. Introduction

With the rapid development of China's new energy vehicle industry, related technologies, equipment, standards, and experience in talent training have gradually entered international cooperation contexts. As an important force serving industrial development, vocational education undertakes tasks such as technical training, curriculum development, and the promotion of talent cultivation models in the process of "vocational education going global."

English for new energy vehicle specialties is not merely a matter of language translation. Rather, it serves as an important bridge connecting professional knowledge, occupational skills, and intercultural understanding. When overseas students learn about battery systems, motor control, vehicle maintenance, fault diagnosis, and other related topics, they need not only to master specialized terminology accurately, but also to understand the work processes and technical logic behind these terms[1-3].

If teaching resources are produced simply by translating Chinese textbooks into foreign languages, they often fail to meet the learning habits of local students or the needs of local industrial contexts. Against this background, exploring pathways for the intercultural dissemination of English for new energy vehicle specialties and related teaching resources has strong practical significance and promotional value.

2. The Practical Value of the Dissemination of English Resources for New Energy Vehicles Under the Background of "Vocational Education Going Abroad"

The dissemination value of English resources specialising in new energy vehicles is closely related to the continuous expansion of the global new energy vehicle industry. According to the International Energy Agency's Global EV Outlook 2024, the proportion of global electric vehicles in new car sales has increased from 2% in 2018 to 14% in 2022, and further increased to 18% in 2023. In order to more intuitively present the changing trend of the development of the new energy vehicle industry, this paper organises the relevant data into a comparison bar chart before and after, as shown in Figure 1. It can be seen from Figure 1 that the proportion of global electric vehicles in new car sales shows a significant upward trend, which shows that new energy vehicles are gradually moving from emerging industries to an important part of the global automobile industry, and the demand for related technologies, jobs and teaching is also continuing to grow. For "vocational education overseas", professional English resources are not only language materials, but also important media that connects technology output, curriculum construction and job capacity training. Only when overseas learners master the professional expressions in the fields of power batteries, drive motors, electric control systems, charging facilities and fault diagnosis can they better understand the technical system and workflow of new energy vehicles. It can be seen that the dissemination of professional English resources for new energy vehicles has a clear real demand, which also reflects the practical value of China's vocational education service international industrial cooperation.

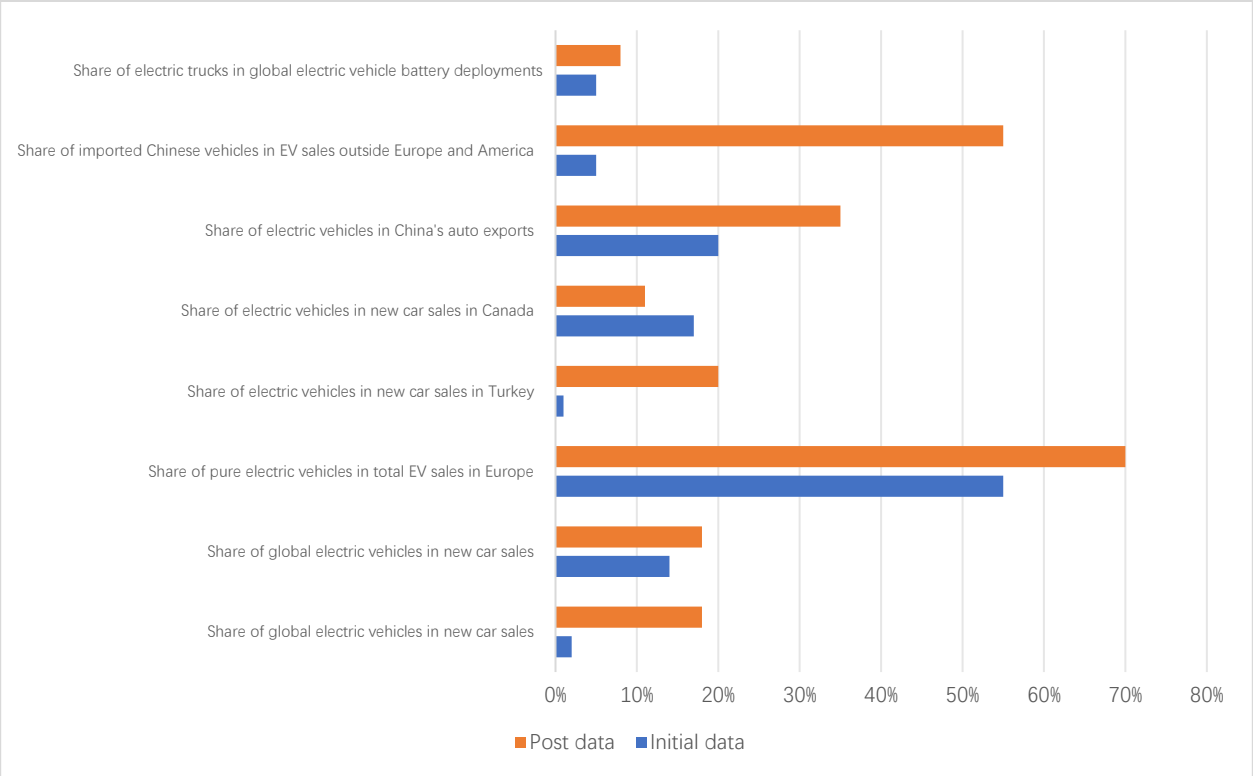

Figure 1. Comparison before and after the proportion of global electric vehicles in new car sales

3. Major Problems in the Cross-cultural Communication of Professional Teaching Resources of New Energy Vehicles

3.1. Inconsist translation of technical terms

The technical terminology of new energy vehicles is obviously technical and systematic. If the same concept appears in multiple translations in different textbooks, courseware and classroom expressions, it will directly affect the establishment of students' knowledge system. For example, words such as power battery, energy recovery, whole vehicle controller, high-voltage interlock, thermal management system, etc. involve both professional concepts and practical operation specifications. Some teaching resources are biased towards literal correspondence in translation, ignoring the general expressions of the industry, resulting in terms that seem accurate, but in fact they are not in line with the international technical context. Some teachers temporarily translate according to their personal experience in classroom explanations. There is a lack of unified standards between textbooks, courseware and practical training guidelines, and it is difficult for students to form a stable memory. Inconsistent terms will also affect subsequent practical training operations[4-5]. Students may not be able to judge whether different expressions point to the same object when reading the device interface, maintenance manual and test report. The problem of translation of technical terms is a language problem on the surface, but it reflects the lack of unified management and professional review mechanism in resource construction.

3.2. Teaching cases are disconnected from local industrial scenarios

Whether the teaching case can be close to the local industrial scenario determines whether students are willing to understand and use the relevant knowledge. Although some new energy vehicle professional teaching resources are complete, most of the cases come from Chinese enterprises, Chinese models and Chinese maintenance scenarios. Overseas students are prone to a sense of distance when learning. Taking the new energy vehicle market in Thailand as an example, Reuters cited Counterpoint Research data to point out that among the sales of electric vehicles in Thailand in 2023, BYD's market share was 49%, Nezha's market share was about 12%, and other brands totalled about 39%. This data shows that the teaching of new energy vehicles in Thailand should not only be limited to the general knowledge explanation of "battery, motor, electric control", but should also be designed in combination with the common Chinese brand models, after-sales service scenarios, charging conditions and maintenance job needs in the local market. If teaching resources still use a single Chinese classroom case, students are prone to the problem of "understanding concepts but unable to connect with their own employment environment". Integrating real brands, models and maintenance tasks in the Thai market into professional English teaching can enhance the sense of reality of teaching content and improve the effectiveness of cross-cultural communication of teaching resources.

3.3. Cultural differences in classroom expression

Cross-cultural teaching not only involves language conversion, but also involves differences in classroom interaction, teacher-student relationship and learning habits.

Vocational education classes in China often emphasise skill training, standard processes and task completion. Teachers are used to directly pointing out the operation requirements and notes in the explanation. Some overseas students may be more accustomed to discussion-based, problem-based or case-based learning. If teachers still focus on one-way lectures, students' participation will be affected. The professional content of new energy vehicles itself is relatively complex, involving high-pressure safety, fault diagnosis, structural identification and equipment operation. If classroom expression lacks the situational foundation, students are likely to regard professional English as isolated vocabulary memory, rather than a tool for solving practical problems. Cultural differences are also reflected in the feedback method. Some students are unwilling to express "I don't understand" in public. If teachers can't observe the learning status through questions, presentations, group tasks, etc., the problems will be hidden. The inappropriate expression in the classroom will make it difficult for high-quality teaching resources to really enter the students' learning process.

4. The Optimisation Path of Cross-cultural Communication of New Energy Vehicle Professional English and Teaching Resources

4.1. Build a collaborative development team

The cross-cultural communication of professional English and teaching resources for new energy vehicles needs to be jointly completed by multiple subjects, and cannot be promoted by language teachers or professional teachers alone. A more reasonable team structure should include teachers specialising in new energy vehicles, professional English teachers, enterprise technical personnel, translators and teachers from overseas cooperative colleges and universities. Professional teachers are responsible for grasping the knowledge system and technical accuracy, English teachers are responsible for language expression and teaching acceptability, enterprise personnel provide real job tasks and equipment operation experience, and overseas teachers provide feedback on local students' basics, classroom habits and industrial needs. Such a collaborative mechanism can reduce the one-way output tendency in resource development, so that textbooks, courseware, videos and question banks have a sense of cross-cultural adaptation at the design stage. Teamwork should not be limited to one-time translation, but should form a continuous revision mechanism. With the updating of new energy vehicle technology, changes in local industries and the accumulation of students' feedback, teaching resources also need to be constantly adjusted. The establishment of a collaborative development team can ensure that resources have both professional depth and dissemination temperature.

4.2. Build a specialised English terminology library for new energy vehicles

The construction of the terminology library is the basic project to improve the quality of English resources of new energy vehicles. The terminology library should not only list the corresponding words in Chinese and English, but should also include conceptual explanations, application scenarios, common collocations, picture examples and classroom sentences. Taking the "battery management system" as an example, students not only need to know its corresponding "battery management system", but also need to understand its role in voltage monitoring, temperature control, SOC estimation and fault protection. In order to more clearly present the main content of the construction of the new energy vehicle professional English terminology library, this article summarises and sorts out its construction focus, terminology content, classification method, construction basis and application value, as shown in Table 1. It can be seen from Table 1 that the construction of the new energy vehicle professional English terminology library is not a simple vocabulary translation work, but a system project involving terminology standardisation, professional interpretation, resource linkage and teaching application. The terminology library can be classified according to power battery, drive motor, electronic control system, charging system, whole vehicle maintenance, fault diagnosis and other modules, which is convenient for teachers to prepare for courses and students to retrieve[6-7]. During the construction process, you should refer to industry standards, enterprise manuals and international textbooks, and avoid arbitrary translation. The terminology library can also be used synchronously with courseware, practical training instructions, video subtitles and question banks to keep the same term consistent in different resources. A stable terminology system can reduce the difficulty of students' understanding and enhance the trust of overseas cooperative institutions in the professionalism of China's teaching resources.

Table 1. Key points for the construction of the new energy vehicle professional English terminology bank

Summary perspective	Main Content	Function
Construction focus	Establish a professional English terminology database for new energy vehicles	Improve the standardization of professional English resources
Terminology content	Not only list the corresponding words between Chinese and English, but also include concept explanations, application scenarios, common combinations, image examples and classroom sentences	Help students understand the professional meanings behind the terms
Classification method	It can be classified by modules such as power battery, drive motor, electronic control system, charging system, vehicle maintenance, fault diagnosis, etc.	Facilitate teachers' lesson preparation and students' search
Construction basis	Refer to industry standards, enterprise manuals and international general textbooks	Avoid random translations and enhance the accuracy of terms
Application value	Used in conjunction with courseware, practical training guides, video subtitles and question banks	Maintain consistency in the expression of terms across different teaching resources

4.3. Promote the integrated adaptation of textbooks, courseware, videos and question banks

The cross-cultural communication of teaching resources can not only change the text of textbooks, but also realise the overall adaptation between textbooks, courseware, videos and question banks. The textbook is responsible for building a knowledge framework, the courseware is responsible for classroom presentation, the video is responsible for demonstrating the operation process, and the question bank is responsible for testing the learning effect. If the content of the four types of resources is inconsistent, students are prone to breaking in understanding in learning. The major of new energy vehicles has strong practical attributes. A lot of knowledge is difficult to explain by words alone, such as the process of high-voltage power-off, insulation testing steps, precautions for disassembly and installation of power batteries, etc., which are more suitable for presentation through videos and diagrams. When adapting resources, multiple resource forms can be designed around the same job task, so that students can repeatedly contact the same knowledge point in reading, watching, practising and operating. The design of the question bank should also avoid simple examination of vocabulary translation. Situational judgement, process sorting, fault analysis and safety specification identification can be added. Resource integration adaptation can enhance the continuity of learning and make professional English truly embedded in professional courses, rather than language materials attached outside the course[8].

4.4. Integrate professional English teaching into real job tasks

If professional English teaching is out of the job task, it is easy for students to understand the learning goal as memorising words and translating sentences. English teaching of new energy vehicle majors should be carried out around the real work process, such as vehicle pick-up inquiry, fault reading, parts identification, maintenance record filling, inspection report description, customer communication and safety tips, etc[9-10]. Teachers can design tasks such as "power battery fault diagnosis", "charging system abnormality troubleshooting" and "high-voltage safety inspection", so that students can use technical vocabulary and expressions in the process of completing the task. This teaching method can help students understand the practical use of language and improve their professional communication skills. Job tasks can also be adjusted according to the needs of local enterprises, so that students' learning content can be linked to future employment scenarios. In the classroom, teachers can guide students to transform their professional knowledge into English expression through activities such as role-playing, filling in work orders, reading equipment instructions and group reports. Professional English is no longer an additional content other than professional courses, but has become an important tool for completing professional tasks.

5. Conclusion

Under the background of "vocational education going abroad", the cross-cultural communication of new energy vehicle professional English and teaching resources is related to the quality of the international development of vocational education in China. The new energy vehicle major has the characteristics of technology-intensive, job-oriented and fast industrial renewal. Resource dissemination should not stay at the level of simple translation, but should be systematically designed for the learning base, cultural habits and industrial environment of different countries. The current problems such as inconsistent terminology translation, disconnection of case scenarios, and inappropriate classroom expression will affect overseas students' understanding of professional knowledge and acceptance of Chinese vocational education resources. In the future, relevant institutions should strengthen collaborative development, establish a unified terminology system, promote the overall adaptation of multi-type resources, and integrate professional English teaching into real job tasks. Only by combining language expression, professional knowledge, practical skills and cultural adaptation can the professional teaching resources of new energy vehicles play a greater role in cross-cultural communication and provide strong support for China's vocational education to go abroad with high quality.

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