

An Analysis of China's Vocational Education Model for International Expansion with Enterprises Under the Belt and Road Initiative

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Abstract

The Belt and Road Initiative's implementation has demonstrated substantial acceleration in Chinese enterprise internationalization. As a critical interface between corporate requirements and human capital supply, vocational education internationalization has emerged as a primary area of focus within China's vocational education reform framework. Against this backdrop, this paper examines China's vocational education educational model of going abroad with enterprises, analyzing its primary determinants and primary forms. Furthermore, it addresses operational challenges related to the policy and legal environment, faculty development, educational quality assurance, and financial support, and proposes an optimization path to support the sustainable development of China's vocational education under the Belt and Road Initiative.

Key words: Vocational education; Belt and Road; Going abroad with enterprises; Transnational vocational education

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In 2013, the Chinese government introduced the Belt and Road Initiative, which aims to promote economic integration, development coordination, and shared

prosperity among participating countries through improved infrastructure connectivity, economic and trade cooperation, and cultural exchange (National Development and Reform Commission, 2018). This initiative has had a far-reaching impact on the global economic landscape and regional collaboration. Within the Belt and Road Initiative framework, Chinese enterprises have expanded their strategic presence in participating countries, demonstrating measurable advancement in infrastructure construction, energy development, and manufacturing modernization. However, in navigating diverse cultural environments, these enterprises have faced challenges in their international expansion, including Management Communication Barriers and a shortage of Skilled Labor Force.

Vocational Education has played a important function as a key approach to cultivating Skilled Talents in addressing the above challenges. In the process of internationalization, Chinese vocational education has gradually explored a school-running model centered on "following enterprises overseas". Through deep cooperation between schools and enterprises, this model achieves precise alignment between overseas skill talent cultivation and industrial needs (Han and Gao, 2021). This model not only effectively addresses the shortage of Skilled Labor Force encountered by Chinese enterprises during their overseas expansion, but also cultivates localized, high-quality Skilled Talents for Countries Along the Route of the Belt and Road Initiative, providing substantial technical support for their Economic Structure Adjustment and social development. It promotes a Multi-party Win-win scenario among education, enterprises, and society (Wang, 2020). It also provides a Chinese practice paradigm for global research on the internationalization of vocational education.

1. ANALYSIS OF THE CURRENT SITUATION OF CHINA'S VOCATIONAL EDUCATION SCHOOL-RUNNING MODEL OF GOING ABROAD WITH ENTERPRISES

1.1 Exploration of Driving Factors for school-running model of going abroad with enterprises

1.1.1 Urgent Needs of Chinese Enterprises' Internationalization

As of 2024, China's cumulative investment in Belt and Road partner countries totaled \$370 billion, representing 11.8% of its global outward investment portfolio (Xinhua News Agency, 2024). As the Belt and Road Initiative deepens, Chinese enterprises continue to expand their overseas investment scale, covering key sectors such as infrastructure construction, manufacturing, and energy development. Nevertheless, these regions typically experience labor market disequilibrium, characterized by a significant shortage of skilled workers that constrains the effective execution of enterprise initiatives. The vocational education going abroad with enterprises educational model can directly address enterprise needs by cultivating skilled labor for overseas operations in a targeted manner. The implementation in China's Hainan Province exemplifies this methodology. The province has explicitly prioritized educational cooperation with Southeast Asian nations, focusing on academic degree programs, course studies, internships and practical training, as well as faculty and student exchanges. It actively attracts high-level overseas vocational institutions to establish schools or campuses with independent legal status offering STEM, agriculture, and medical disciplines, thereby building the "Study in Hainan" vocational education brand. The integration of policy objectives with corporate requirements illustrates the systemic nature of international vocational education development under the Belt and Road Initiative.

1.1.2 Challenges of Host Countries' Shortage of Technical and Skilled Talent

International Labour Organization data indicates that numerous Belt and Road countries exhibit relatively low aggregate skill levels in their workforces, attributable to underdeveloped vocational education systems and insufficient educational resources. This makes it difficult to meet the demand for technical talent during rapid industrialization. Therefore, through the school-running model of going abroad with enterprises, vocational education can collaborate with host countries to conduct skill training and enhance the vocational skill levels of the local workforce.

From a broader perspective, the "following enterprises overseas" initiative is not merely a one-way export of Chinese vocational education, but rather a two-way collaboration that leverages talent development to reshape global industrial chains. It deeply integrates China's

standards, equipment, and teaching resources with the host countries' markets, labor forces, and policy advantages. While addressing the local "shortage of skilled workers," it also provides a self-sustaining talent pool for Chinese enterprises engaged in overseas production capacity cooperation. Furthermore, it injects sustainable "human capital dividends" into the industrialization and re-industrialization processes of Belt and Road partner countries. Vietnam's case demonstrates this point. Despite becoming the world's second-largest textile exporter, Vietnam faces significant industrial imbalances and mounting pressure for green transformation, urgently requiring advanced technologies and skilled talent. This demand complements the strengths of China's vocational education system.

2. SPECIFIC FORMS OF CHINESE VOCATIONAL EDUCATION FOLLOWING ENTERPRISES OVERSEAS

2.1 Co-establishing International "Order-Based" Classes

International order-based programs align with enterprises' global strategic objectives. Through collaborative development between educational institutions and enterprises, training curricula are designed to prepare technical professionals with international competencies, specialized skills, and cross-cultural capabilities, enabling targeted talent provision. For example, Zhengzhou Railway Vocational & Technical College collaborated with the Ethiopian Addis Ababa-Djibouti Railway Operation and Maintenance Project Company to establish the Yaji Railway International Order Class. This not only provided Ethiopia with technical talent meeting railway operation needs but also offered human resource support for the sustainable development of Chinese enterprises in the country's infrastructure construction sector (Wang, Dong, & Xing, 2020). Guangzhou Panyu Polytechnic collaborated with Guangzhou Dayang Education Technology Co., Ltd. to launch the "Dayang Order Class," contributing to the growth of the cross-border e-commerce industry (Hou, 2024). Tianjin University of Technology and Education collaborated with Ethiopia to cultivate over 3,000 high-quality technical talent for local school-enterprise international order classes (Xinhuanet, 2024).

2.2 Overseas training centers, workshops, and practical training bases are to be jointly established

Presently, more than 200 Chinese vocational education institutions have established partnerships with educational organizations across 70 countries and regions to create international training centers, Luban Workshops, Chinese Workshops, and practical training facilities. These initiatives facilitate the sharing of high-quality resources,

co-development of teaching and training courses, and collaborative cultivation of internationally-oriented talent. This has led to the formation of an international talent development system that integrates education and training, skill enhancement, industrial upgrading, and cultural exchange. For instance, Tianjin Light Industry Vocational Technical College and Tianjin Mechanical and Electrical Vocational Technical College, in collaboration with Dalian Machine Tool Group and Chennai Institute of Technology in India, established a Luban Workshop in India (Li, 2021), contributing to the localization of industrial talent and modernization of operations. Chongqing Industry Polytechnic College partnered with Changan Automobile Co., Ltd. to set up global training centers and talent development bases in countries such as Saudi Arabia, Mexico, and Russia, assisting Changan and local communities in cultivating professional technical personnel in the field of automobile manufacturing and maintenance (Modern Higher Vocational and Technical Education Network, 2024). These overseas training centers and workshops not only impart skills but also emphasize cultural exchange and emotional connection. For instance, the Cultural Experience Center at Zheng He Academy in Vietnam offers courses in calligraphy, paper-cutting, and Jiangsu intangible cultural heritage, while hosting festive events like the Spring Festival and Mid-Autumn Festival, bringing Chinese culture vividly to life on foreign campuses.

2.3 Co-developing Curriculum Systems and Technical Standards

Under the Belt and Road Initiative, the “following enterprises overseas” model of Chinese vocational education increasingly emphasizes the two-way integration of localization and internationalization, particularly in curriculum system development and technical standard formulation. On one hand, Chinese vocational institutions and enterprises design localized curricula based on the industrial needs of host countries, and jointly develop targeted and practical curriculum systems in accordance with international vocational education standards. On the other hand, many vocational institutions collaborate with Chinese enterprises to integrate Chinese technical specifications with local production practices, gradually exploring and forming a set of technical specifications and vocational certification systems with both international applicability and local practicality. A notable example is the collaboration between Chongqing Industry Polytechnic College and Changan Automobile Co., Ltd., which integrated the automotive industry’s technical requirements in countries like Ethiopia with Chinese automotive industry standards to develop “the Training Competency Standards for Personnel in Automobile After-Sales Service Enterprises”. meeting the competency requirements for international automobile after-sales service talent in “going global” positions (Modern Higher

Vocational and Technical Education Network, 2024). Guangdong Vocational College of Water Resources and Electric Engineering collaborated with enterprises to develop a core curriculum system for hydropower majors and supplied over a hundred technical elites to Chinese hydropower enterprises in Africa, such as China Communications Construction Group and China Railway International Group (Yang, 2024). Shandong Business Vocational College led collaborations with Northern Mining Co., Ltd. and Lamika Co., Ltd. in the Democratic Republic of Congo to develop “Chinese + Mining” related course resources, providing precise language teaching materials for talent cultivation and enterprise training (Wu, 2024).

3. ANALYSIS OF CONSTRAINTS ON THE VOCATIONAL EDUCATION MODEL OF FOLLOWING ENTERPRISES OVERSEAS

3.1 Complexity of Policy and Legal Environments

The substantial variations in education policies, certification frameworks, and vocational qualification standards across countries create adaptation challenges for Chinese vocational education institutions seeking to operate within host country regulatory environments. This leads to prolonged approval and implementation cycles for school-enterprise cooperation projects. Additionally, policies and regulations in some host countries are not yet fully developed, with restrictions on foreign investment in the education sector and barriers to vocational qualification certification further increasing the difficulty of educational output.

3.2 Challenges in Selecting and Deploying Interdisciplinary Teachers

The international school operation model adopted by Chinese vocational education institutions places enhanced demands on faculty deployment. However, the selection and deployment of interdisciplinary teachers still face multiple constraints. Firstly, there is no unified standard for selecting interdisciplinary teachers, who must meet both professional skill requirements and possess certain foreign language proficiency, cross-cultural communication skills, and international education experience. Secondly, the domestic training system for interdisciplinary teachers is not yet well-established, focusing more on single-discipline or skill training. Furthermore, teachers deployed overseas often face multiple challenges including cultural differences, legal regulations, and work environments. Finally, inadequate support mechanisms also restrict the effectiveness of interdisciplinary teacher deployment, including issues such as salary and career development planning during overseas deployment that remain unresolved.

3.3 Lack of Effective Monitoring of Education and Teaching Quality

In current transnational education cooperation, common issues such as mismatched curriculum systems, inconsistent teaching standards, and underdeveloped quality assessment systems significantly undermine the effectiveness of teaching quality monitoring. Therefore, there is an urgent need to establish a quality assurance system that can adapt to the specific conditions of host countries while meeting international requirements, ensuring the sustainable and healthy development of education cooperation. Additionally, the effectiveness of quality monitoring mechanisms relies on multi-party collaboration. Enterprises, vocational institutions, and host country governments should work together to establish certification systems aligned with international vocational qualification standards.

3.4 Inadequate Support for Overseas School-Running

Key aspects such as expanding resource channels, improving practical training facilities, creating teaching venues, developing educational materials, and deploying teachers overseas all depend on stable funding support and policy guarantees (Ke, 2023). However, in practice, vocational institutions and enterprises must independently raise funds for overseas school-running. The funding sources for vocational institutions' overseas operations are often limited, and the lack of government incentive policies makes it difficult for enterprises to foresee short-term returns on investment, dampening their enthusiasm for investment (Wu, 2024). Simultaneously, the absence of relevant supporting policies, such as tax incentives and measures for overseas school-running, places significant economic pressure on both schools and enterprises for long-term investment.

4. RESPONSE STRATEGIES

4.1 Improve Policy and Legal Support Systems to Optimize the Environment for Outward-Oriented Education Development

In response to the complexity of education policy and legal frameworks in host countries, governmental coordination mechanisms should be established to facilitate cross-departmental cooperation. Collaborating with departments such as foreign affairs, education, and commerce, the government should promote the signing of bilateral agreements and cooperation protocols on education policies between China and host countries, ensuring the legality and feasibility of the vocational education model followed by enterprises overseas within the legal frameworks of host countries.

4.2 Establishing a Multi-Layered Training and Incentive Framework for Cross-Disciplinary Faculty

First, improve the training system for interdisciplinary teachers. In response to the needs and challenges of selecting interdisciplinary teachers, establish a specialized plan for training international vocational education teachers as soon as possible. It is recommended to set up dedicated "International vocational education Teacher Training Centers" in domestic vocational colleges. Through school-enterprise cooperation, provide teachers with comprehensive training in industry technology, cross-cultural communication, foreign language skills, and international vocational education teaching methods (Du and Yang, 2019). Second, strengthen incentive and support mechanisms for teachers sent abroad. For such teachers, systematic safeguards should be provided in terms of salary and benefits, career development, and transition back to domestic work. Specifically, a special allowance system for overseas teachers can be established, with preferential policies in professional title evaluation and job promotion. Concurrently, mechanisms for seamless career transition upon their return should be refined to ensure their international experience is effectively leveraged domestically.

4.3 Establish an International Education Quality Assurance and Evaluation System

First, build a dual quality monitoring system. To address the lack of education quality monitoring, establish a quality monitoring system jointly composed of Chinese vocational colleges and host country education departments. Through collaboration between schools, enterprises, and host country governments, develop curriculum standards and teaching norms to ensure that course content meets the vocational education needs of host countries. Second, introduce third-party international education quality certification agencies. Conduct regular evaluations of the implementation outcomes of overseas projects to ensure educational quality meets international standards. Drawing on internationally recognized vocational education quality certification systems, develop localized quality certification standards tailored to the host country's specific circumstances (Liu, 2019).

4.4 Strengthen Funding and Policy Support for Overseas School-Running

First, establish a special funding support mechanism. To address the funding shortage for overseas school-running, it is recommended to raise and establish a "Belt and Road" Vocational Education International Development Special Fund through diversified channels such as government allocations, enterprise donations, and international cooperation funding. This fund would provide stable financial support for vocational colleges' overseas school-

running projects. Second, introduce tax incentives and risk protection policies to enhance enterprises' enthusiasm for participating in overseas school-running. For example, allow pre-tax deductions or tax reductions for expenses related to vocational education overseas projects undertaken by enterprises. Third, establish a "Belt and Road" International Vocational Education Collaborative Service Platform to provide comprehensive services such as policy interpretation, teacher allocation, and project management for projects following enterprises overseas.

5. DEEPEN INTERNATIONAL COOPERATION AND BUILD A MULTI-PARTY COLLABORATIVE MECHANISM

The first strategy involves fostering comprehensive collaboration between Chinese and international educational institutions and enterprises. It is recommended to establish Sino-foreign joint venture vocational education training centers in host countries, encouraging Chinese enterprises to collaborate with local vocational colleges in host countries for joint school-running, creating localized vocational education demonstration projects. Second, strengthen the construction of regional international vocational education cooperation platforms, such as establishing a Belt and Road Industry-Education Collaboration Alliance (Chen, 2017). Through regular activities such as Sino-foreign vocational education forums and industry technology competitions, deepen the international influence of Chinese vocational education.

6. CONCLUSION AND OUTLOOK

The enterprise-accompanying international school operation model developed by Chinese vocational education constitutes a significant innovation in vocational education internationalization. It not only provides crucial talent support for Chinese enterprises "going global", but also stimulates development into industrial upgrading and economic transformation in Belt and Road partner countries through skill development and educational cooperation. As an important pathway for vocational education to serve national strategies, this model promotes the international development of enterprises while simultaneously driving innovation and upgrading of China's vocational education system, accumulating valuable experience for international educational cooperation.

Empirical evidence demonstrates that international vocational education delivery has developed from initial single-project partnerships into a comprehensive framework of multi-faceted international collaboration. Looking ahead, with the deepening advancement of the Belt and Road Initiative, the "following enterprises

overseas" school-running model will be further optimized and deepened. It will serve global vocational education development in a more open, diverse, and high-quality manner, continuously contributing Chinese wisdom and solutions to building a community with a shared future for mankind. Specifically, it will continue to develop in the following areas: The first development trajectory involves enhanced digital transformation. With the advancement of the 'Digital Silk Road' initiative, international vocational education delivery is expected to undergo significant digitalization. Second, upgraded standard export. This will evolve from simple curriculum export to the export of standards and models. Third, continuously improved sustainable development mechanisms. By establishing more robust benefit-sharing mechanisms and sustainable development models, vocational education accompanying enterprises overseas will place greater emphasis on building long-term mechanisms for projects.

In summary, as a vital pathway for the internationalization of China's vocational education, the overseas expansion of vocational education alongside enterprises will continue to contribute Chinese wisdom and solutions to building a community with a shared future for mankind. By deepening the substance of cooperation, innovating cooperation models, and refining cooperation mechanisms, China's vocational education will showcase its value and appeal on a broader international stage.

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