Analysis on Development Paths of "Vocational Education Going Global" under the Belt and Road Initiative from the Talent Training Perspective

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Abstract: Since the BRI launch, vocational education cooperation has become a pillar of people-to-people exchange and industrial connectivity. From the talent training perspective, this paper analyzes VEG's logic, patterns and bottlenecks. Nevertheless, expansion remains constrained by mismatched professional standards, insufficient curriculum adaptation to local labor markets, shortage of bilingual teaching staff, and limited cross-border recognition of vocational qualifications. Four optimized development paths are proposed: jointly developing curriculum standards aligned with international industrial norms, building a localized "dual-qualified" faculty team, constructing a quality assurance system linking education with industry, and cultivating composite skilled technical talent with cross-cultural competence.

Keywords: Belt and Road Initiative; Vocational Education Going Global; talent training; international cooperation; Luban Workshop; development path

1. Theoretical Foundations and Developmental Context of Vocational Education Going Global

1.1 Conceptual Boundaries and Theoretical Foundations

"Vocational Education Going Global" refers to the cooperative development and delivery of vocational education resources, including schools, curricula, faculty, standards and certification systems, by Chinese vocational education institutions in collaboration with overseas partners. It differs from traditional international student recruitment and Sino-foreign cooperative programs in that VEG emphasizes the transfer and local adaptation of an entire training system, rather than simply the movement of students or the import of curricula.

The theoretical foundation of VEG can be understood through three complementary lenses. First, human capital theory holds that investment in vocational skills is a primary driver of labor productivity and economic growth, providing the economic rationale for sharing vocational education resources across borders. Second, the public diplomacy perspective treats vocational cooperation as a form of people-to-people exchange: because its outcomes are concrete and employment-related, it can build mutual understanding between partner institutions and communities in a way that declaratory cooperation cannot. Third, and most directly relevant here, is the literature on cross-border transfer of vocational education and training. Studies of German enterprises operating in China, India, Japan and the United States find that local factors in the host country exert so strong an influence that the home model cannot be transferred intact, which makes policy borrowing in vocational education partial at best[1]. A systematic review of 26 empirical studies in this field finds the evidence base still dominated by single-case qualitative designs, and calls for comparative and longitudinal work before the conditions of transfer can be stated with confidence[2].

1.2 Policy Evolution and Institutional Drivers

The policy framework of VEG has been gradually constructed since 2013. China's Education Modernization 2035, issued by the Central Committee of the Communist Party of China and the State Council in 2019, calls for steadily advancing the Education Action for the Belt and Road

and, for the first time in a national strategic document, encourages qualified vocational colleges to build Luban Workshops overseas[3]. The "National Vocational Education Reform Implementation Plan" issued in 2019 further positions vocational education as a distinct type of education enjoying equal importance with general education, and calls for building a number of high-level vocational schools and majors with international competitiveness. The 2022 revision of the Vocational Education Law, effective from May 2022, gives outbound school-running an explicit legal basis for the first time. Article 13 provides that the state encourages international exchange and cooperation in vocational education, supports the introduction of high-quality overseas resources, encourages qualified vocational institutions to run schools outside China, and supports mutual recognition of vocational learning outcomes in various forms.

Three institutional drivers can be identified. The first is industrial capacity cooperation. Chinese enterprises investing in manufacturing, rail transit, new energy and digital infrastructure along BRI routes require local skilled workers. The second is the demand side of host countries. Many Southeast Asian, African and Central Asian countries have young and growing populations and vocational education systems that are still expanding, which makes cooperation in skills development a shared priority rather than an external proposition. The third is the supply-side upgrading of Chinese vocational education. After years of Double High-level Plan (High-Level Vocational Schools and Specialty Construction Plan with Chinese Characteristics) construction, leading Chinese vocational colleges have accumulated mature curriculum systems, practical training bases and industry-education integration mechanisms that are ready for international application.

1.3 Current Scale and Main Cooperation Forms

By the end of 2024, Chinese vocational education institutions had established a substantial overseas footprint. More than 200 Chinese vocational colleges had established over 400 cooperative institutions and programmes with partners in about 70 countries and regions. Within this footprint, more than 30 Luban Workshops had been built across Asia, Europe and Africa, covering 14 broad programme categories and more than 50 specialties in fields such as numerical control, electrical engineering, automotive maintenance, e-commerce and agriculture. In addition, a number of overseas vocational colleges, international talent training bases and overseas training centers have been co-built with host-country governments and enterprises.

From the talent training perspective, these forms constitute a layered system. Luban Workshops function as entry-level nodes that demonstrate Chinese vocational standards and build local trust. Overseas campuses provide long-cycle degree programs that systematically cultivate local technical backbones. Enterprise training centers bridge education and employment, ensuring that graduates can be absorbed by the labor market.

2. Existing Patterns and Key Bottlenecks in Talent Training

2.1 Typical Talent Training Models in Practice

Three typical models can be observed in current VEG practice. The first is the "school-to-school" model, in which Chinese and host-country vocational schools jointly design curricula, exchange faculty and issue dual certificates. This model is common in Southeast Asia and Central Asia, where host-country partners have existing school infrastructure but need curriculum upgrading. The second is the "enterprise-education" model, in which Chinese enterprises operating overseas partner with Chinese vocational colleges to build training centers inside or near industrial parks. This model closely aligns training with enterprise recruitment and is prevalent in manufacturing and energy projects. The third is the "Luban Workshop" model, initiated by Tianjin and now replicated nationwide, which emphasizes sharing Chinese occupational standards, teaching equipment and teaching teams with partners and adapting them jointly, in a compact, demonstration-oriented format.

2.2 Structural Bottlenecks in Talent Training

Despite the visible expansion, the quality of talent training in VEG projects faces four structural bottlenecks. The first is the mismatch between professional standards and local labor market demand. Many overseas programs directly transplant Chinese curricula designed for Chinese industrial conditions, without sufficient adaptation to the equipment, regulations and industrial structure of host countries. Graduates acquire skills benchmarked to Chinese standards, while recognition by host-country employers and licensing bodies follows separate criteria.

The second bottleneck is the shortage of bilingual and cross-cultural teaching faculty. VEG requires teachers who are not only professionally competent but also capable of teaching in English or local languages and understanding the cultural context of students. At present, most dispatched teachers lack systematic cross-cultural training, and local teacher teams are still under construction. This gap directly limits the depth and sustainability of training. The capacity to adapt provision locally depends heavily on the resources and competences of the providing institution, with relational resources and intercultural competence ranking among the factors that experienced providers regard as most critical.

The third bottleneck is the weak recognition of vocational qualifications across borders. Mutual recognition of vocational education certificates between China and BRI partner countries remains limited. A graduate trained in a Luban Workshop may receive a certificate that is recognized by Chinese enterprises but not by the host-country labor authority, reducing the incentive for students to enroll and for local governments to support the programs. Recognition has been treated internationally as a systemic problem rather than a matter of bilateral goodwill: the UNESCO TVET strategy for 2022-2029 places recognition, validation and accreditation of learning, together with quality assurance and governance, among the areas to be strengthened in member states, on the reasoning that a qualification is portable only when the framework behind it can be read from both sides.

The fourth bottleneck is the insufficient depth of industry-education integration overseas. In China, vocational education reform relies on close partnerships with enterprises, industrial colleges and apprenticeship programs. Overseas, the arrangements for sharing the cost of training infrastructure among enterprises, institutions and public authorities remain unsettled, and structured cooperation between local enterprises and vocational institutions is at an early stage[4]. As a result, many overseas programs remain classroom-centered, with limited practical exposure to real production processes.

2.3 Case Observation: Luban Workshops in Southeast Asia

This section draws on the author´s involvement in vocational education cooperation projects in Southeast Asia, together with project reports, programme records and site notes. It is offered as practitioner reflection rather than as findings from a systematic interview study; no formal interviews were conducted for this paper. Partner institutions are not identified individually, in order to respect the confidentiality of ongoing cooperation agreements. Three constraints recur in the project documentation. The duration of dispatched teachers is often short, leading to discontinuity in teaching. Expectations about what a short programme can deliver are not aligned: learners commonly seek immediately applicable operating skills, while curriculum designers work from a broader occupational profile, and the gap is a design problem rather than a shortcoming on either side. The employment channel is concentrated in Chinese-funded enterprises, leaving limited pathways for graduates who prefer local employers. These observations suggest that the current scale expansion has not yet been matched by a corresponding deepening of the talent training model[5].

3. Optimized Development Paths from the Talent Training Perspective

3.1 Jointly Developing Curriculum Standards Aligned with International Industrial Norms

A substantial part of the quality problem in VEG concentrates in curriculum standards, which need to be Chinese in origin, internationally legible and locally workable at the same time. Chinese vocational colleges should work together with host-country education authorities, industry associations and leading enterprises to develop joint curriculum standards based on real job tasks. The process should follow a "task analysis-standard formulation-curriculum development-certification alignment" chain, ensuring that every module corresponds to a recognizable skill need in the host-country labor market.

3.2 Building a Localized "Dual-Qualified" Faculty Team

Whether VEG becomes sustainable depends substantially on the extent to which local teachers are able to take over training tasks. A two-track faculty development strategy should be adopted. On one hand, dispatched Chinese teachers should be selected not only for professional competence but also for cross-cultural communication ability, and should receive pre-departure training in language, culture and pedagogy. On the other hand, host-country teachers should be invited to Chinese vocational colleges for long-term training, so that they gradually master the Chinese vocational education model and teaching methods.

The "dual-qualified" concept should also be extended to include industry practitioners. Overseas industrial colleges should invite engineers from Chinese and local enterprises to participate in teaching, bringing real production cases into the classroom. This arrangement broadens practical teaching and, where it is sustained, also gives students access to employer networks.

3.3 Constructing a Quality Assurance System Linking Education with Industry

Quality assurance is the weak link in current VEG practice. A systematic quality assurance framework should be built around three dimensions. The input dimension ensures that training equipment, teaching materials and faculty meet agreed standards. The process dimension monitors teaching delivery, student engagement and practical training through regular audits. The output dimension tracks graduate employment, employer satisfaction and further study rates, using these data to feed back into curriculum revision.

Ownership is repeatedly identified in transfer research as the factor that decides whether an external quality mechanism takes root: acceptability among local actors, their participation in the process at institutional level and their decision-making authority are what turn a transferred framework into an institutional routine rather than a formality. A system built on that basis moves VEG from a project-based initiative towards an institution with shared accountability embedded in the host-country skill ecosystem.

3.4 Cultivating Composite Technical-Skilled Talents with Cross-Cultural Competence

The ultimate goal of VEG is to cultivate talents who are not only technically skilled but also capable of working across cultural contexts. The talent training model should therefore go beyond narrow skill training and include cross-cultural communication, basic Chinese language proficiency, international labor standards and digital literacy. These additional competencies enable graduates to work effectively in Chinese enterprises, local enterprises and joint ventures, increasing their employability and geographic mobility.

4. Conclusion

"Vocational Education Going Global" under the Belt and Road Initiative is a strategic endeavor that connects industrial cooperation, diplomatic trust and human capital development. From the talent training perspective, the past decade has witnessed significant expansion in the scale

and forms of cooperation, with Luban Workshops, overseas campuses and enterprise training centers forming a layered deployment network. However, the quality of talent training remains constrained by standard mismatches, faculty shortages, limited recognition of qualifications and shallow industry-education integration. The four development paths proposed in this paper—joint curriculum standards, localized dual-qualified faculty, industry-linked quality assurance, and composite talent cultivation—offer an integrated framework for addressing these bottlenecks. Deepening the talent training dimension is therefore the condition on which the shift from scale expansion to sustainable development depends.

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