

Research on the Development of Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

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The development of a vocational education standard system in the Guangdong-Hong Kong-Macao Greater Bay Area embodies the fundamental laws of integration between industry and education. It serves the intrinsic need for a talent hub and is essential for the sustainable development of vocational education in the area. While certain achievements have been made in higher vocational education cooperation across the cluster, there are notable differences in industrial foundations, economic systems, and cultures among the three regions. The main body responsible for the development of vocational education standards in the Bay Area remains undefined, with unclear development mechanisms and significant disparities in regional resource endowments, which undermine the support for governance integration of education and industry. The Greater Bay Area should establish a main body for vocational education standards development, construct a standard system framework, engage intermediary organizations in standard governance, and complete the formulation of a vocational education standard system.

Keywords: Guangdong-Hong Kong-Macao Greater Bay Area, vocational education, resource endowment, framework mapping

Introduction

In 2021, the Fourth Session of the Thirteenth National People's Congress adopted the "Recommendations of the Central Committee of the Communist Party of China on Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and the Long-Range Objectives for 2035" (hereinafter referred to as the "14th Five-Year Plan"). This plan emphasizes the need to improve national standards for vocational and technical education. The Ministry of Education of China initiated the development of vocational education standards in 2011, and by 2017 had completed 230 professional teaching standards and 410 higher vocational teaching standards. These standards include professional catalogs for vocational education, teaching standards that regulate professional teaching, and internship standards that reflect the characteristics of vocational colleges. The national vocational education standards exhibit a dotted distribution feature, and the basic

Acknowledgement: This research is supported by the China Vocational and Technical Education Association—Research Institute of Vocational Education in New Era China, under the major topic "Research on the Development of Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area" for the year 2021 (Project No. SZ21B031); and the Guangdong Province Continuing Education Quality Improvement Project on Teaching Reform and Research 2022, "Research on the Path of Ideological and Political Construction of Law Courses in Higher Vocational Education from the Perspective of Combining Virtue and Law" (Project No. JXJYGC2022GX537).

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framework of the entire standard system has taken shape. This framework guides the schooling standards and quality of talent cultivation in vocational colleges, and provides a systematic structure for local vocational technical standards.

In 2021, the General Offices of the CPC Central Committee and the State Council issued “Opinions on Promoting the High-Quality Development of Modern Vocational Education”, further clarifying the establishment of national vocational education standards and encouraging localities to introduce higher local standards. To achieve the internationalization of vocational colleges, professional standards and curriculum standards should go global and possess international influence. On the local vocational education standards development front, provinces like Guangdong, Jiangsu, and Henan have actively explored the establishment of regional vocational education standards. In August 2023, Jiangsu Province released the “Guide to Dual System Vocational Education Talent Cultivation”, led by Suzhou Chien-Shiung Institute of Technology. Under the policy guidance of the “Implementation Plan for National Vocational Education Reform”, local vocational colleges can complete the formulation of school-based teaching standards and professional standards.

The “National Standardization Development Outline” states: “By 2025, the development of standardization will shift to quality and efficiency.” The “Vocational Education Law” mentions the term “standard” 21 times. Whether from the perspective of the intrinsic demand for high-quality development of vocational education as a type of education or the extrinsic demand for improving vocational education governance efficiency, developing a standard system distinct from general education is a timely issue for the development of vocational education. The standard construction in the Guangdong-Hong Kong-Macao Greater Bay Area has not yet made significant progress. For example, among the 166 higher vocational colleges in the nine cities of the Greater Bay Area, the professional setups align with the needs of industrial development in the region, connecting advanced manufacturing, modern services, the marine economy, and strategic emerging industries. The Hong Kong Special Administrative Region has established 14 institutions, including the Hong Kong Institute of Vocational Education, under the Hong Kong Vocational Training Council. The Macao Special Administrative Region has eight vocational colleges, including the Macao Polytechnic Institute and the Macao Institute for Tourism Studies. The “Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area” proposes the construction of vocational education parks in the Greater Bay Area. However, specific standard documents targeting the development of vocational education in the Greater Bay Area have not been formulated. The “Memorandum of Cooperation on Jointly Promoting the Development of Standards in the Guangdong-Hong Kong-Macao Greater Bay Area” covers 25 areas, including food, Cantonese cuisine, and traditional Chinese medicine, but does not address the formulation of educational standards.

In summary, the development of a vocational education standard system for the Guangdong-Hong Kong-Macao Greater Bay Area requires detailed implementation and localization of national vocational and technical standards within the three regions. This involves evaluating the necessity and feasibility of developing such a standard system, clarifying “who will formulate it”, “the challenges in formulation”, and “how to formulate it”, as well as defining the framework content for a systematic, clear, and operational vocational education standard system in the Greater Bay Area. Establishing the theoretical dimensions, analytical framework, and theoretical system for the vocational education standard system in the Greater Bay Area is crucial. This study, from the interdisciplinary perspectives of higher vocational education management, vocational education management, and public administration and pedagogy, will conduct a comparative analysis domestically and internationally.

Based on this analysis, the study will form an independent development entity for the Bay Area vocational teaching standards system, a vocational teaching standards map, and an intermediary governance mechanism for vocational education standard development, creating a comprehensive standard system development framework.

Theoretical Justification for the Development of the Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

The Necessity of Developing the Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

First, it reflects the essential principle of integrating industry and education. Vocational education is characterized by a stronger emphasis on practical skills. The formulation of vocational education standards necessitates the deep involvement of enterprises from the three regions. The development of vocational education standards must closely align with industry standards. By leveraging the roles of industry organizations and leading enterprises, and analyzing the compatibility between industry development and vocational education, vocational education curriculum standards can reflect regional industry development. This integration facilitates the planning of industry and vocational education, talent cultivation, and professional standards, enhancing the role of vocational education in supporting regional industrial development. It promotes the multidimensional integration of the vocational education chain, talent cultivation chain, industrial chain, and innovation chain in the Greater Bay Area.

Second, it addresses the intrinsic need for forming a talent hub. One of the micro-level standards of vocational education includes professional settings and catalogs. The Guangdong-Hong Kong-Macao Greater Bay Area boasts 30 industrial clusters, with finance, manufacturing, and communication industries holding absolute advantages in the national industrial chain. However, there is currently a mismatch between the number of high-end talents and the economic development of the Greater Bay Area, with significant gaps in the reserve and precise supply of innovative talents. Against the backdrop of industry-education integration and science-education convergence, the deepening of supply-side reforms in vocational education in the Greater Bay Area must achieve precise alignment between education and industry in the future industrial layout of the area. Analyzing the professional coupling coordination value, the average coupling degree in the Pearl River Delta is 0.569, with Guangzhou at 0.815, Shenzhen at 0.716, and Foshan at 0.608. In terms of spatial layout, the professional settings of vocational education in Guangzhou and Shenzhen are well-coupled with the current industrial status. In contrast, Hong Kong, with strong higher education and research capabilities, is constrained by limited industrial development space. Guangdong's secondary and higher vocational schools match regional economic development but have weaker research capabilities, with the advantage of a complete industrial chain. The higher education ecosystem in the Greater Bay Area requires innovative platforms to support it. Only by promoting precise alignment between vocational education and industrial talent needs, and integrating higher education clusters with industrial clusters, can the strategic positioning of the Greater Bay Area as a global science and technology innovation center be realized.

Third, it is the fundamental guarantee for the continuous development of modern vocational education in China. The national framework for vocational education teaching standards has been established. However, it remains a practical challenge to implement these macro-level standards in accordance with regional economic

development and the practical operations of educational institutions, making them localized, regionalized, and specific. The development of regional vocational education standards serves as the baseline for measuring the quality of regional vocational education. The vocational education standards in the Greater Bay Area are norms for vocational education activities within the area. On one hand, they represent the implementation and refinement of national vocational education standards at the local level. On the other hand, as one of the four major bay areas globally, the key to the internationalization of vocational education in the Greater Bay Area lies in whether these standards can achieve international recognition. It is necessary to consider the economic development and personnel deployment within the area, specify the schooling standards, teacher qualification standards, and talent cultivation quality standards for vocational colleges in the Bay Area. By setting basic norms for curriculum hours, credits, and course structure within the framework of professional teaching standards, these standards provide a reference for mutual recognition of specific course credits in the future and ensure the construction of an international standard system and the quality of talent cultivation.

The Feasibility of Developing the Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

Achievements in the exploration of a standardized linkage mechanism for vocational education clusters in the Greater Bay Area. The vocational education sectors in the three regions have achieved certain cooperation through academic conferences, alliances, and school-enterprise collaborations. For instance, in 2017, the Vocational Education Industry-Education Alliance of the Guangdong-Hong Kong-Macao Greater Bay Area was established, followed by the Tourism Vocational Education Alliance in 2019, the Modern Industry College Vocational Education Alliance in 2020, and the Doctoral-Level Vocational Teacher Training Industry-Education Alliance in 2023. The Jewelry College of Guangzhou Panyu Polytechnic led the establishment of the Greater Bay Area Jewelry Vocational Education Alliance, creating a talent training hub for jewelry vocational education in the Bay Area. In 2023, a distinctive vocational education park in the Greater Bay Area was established, co-built by Shenzhen Polytechnic and the Hong Kong Vocational Training Council, exploring talent cultivation pathways connecting secondary vocational education with higher vocational education, and higher vocational education with undergraduate levels.

New spaces for vocational education collaborative governance in Hengqin-Macao, Qianhai-Shenzhen-Hong Kong, and Hetao-Shenzhen-Hong Kong cooperation zones. First, the establishment of the Hengqin-Macao Deep Cooperation Zone. Under the policy guidance of the “Master Plan for the Construction of the Hengqin-Macao Deep Cooperation Zone” in 2021, the cooperation between the zone and Macao vocational education has developed in depth. This cooperation is manifested in highly convenient personnel exchanges, such as the intelligent and dedicated passage for teachers and students of the University of Macau’s Hengqin campus, facilitating the establishment of a cooperation center and shared training base for vocational education between Guangdong and Macao in Zhuhai Hengqin. The space for industry-university-research cooperation in higher vocational education between the two regions has expanded, enhancing talent exchanges, mutual visits, and training development. The Macao government has also introduced policies to integrate industry and education. The “Second Five-Year Plan for Economic and Social Development of the Macao Special Administrative Region (2021-2025)” proposes gradually constructing a vocational skills framework system among the three regions, exploring mutual recognition of corresponding vocational qualifications, and establishing training bases based on cooperation needs. In the 2022 Policy Address, Macao SAR Chief

Executive Ho Iat Seng emphasized the need to “continue leveraging the advantages of the Greater Bay Area Tourism Education and Training Base to establish professional training and internship platforms for the Greater Bay Area.”

Second, the establishment of the Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone in September 2021, and the introduction of the “Plan for Comprehensively Deepening Reform and Opening Up of the Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone”, aimed at building new advantages in rule convergence, mechanism connection, and international cooperation. To deepen the liberalization of service trade with Hong Kong and Macao, the plan proposes implementing a more open talent attraction and management system, introducing renowned universities to establish cooperative educational institutions in the cooperation zone, and establishing education and training bases for Hong Kong and Macao youth. Moreover, Qianhai launched measures such as “12 Policies to Support Employment and Entrepreneurship for Hong Kong and Macao Youth”, establishing a multi-level innovation and entrepreneurship incubation system for Hong Kong and Macao youth. In government-academic cooperation, Qianhai and Lingnan University of Hong Kong jointly established the Lingnan University Institute for Cultural and Creative Industries, initiating a new model of government-academic cooperation in the cultural and creative industries.

Lastly, the “Development Plan for the Shenzhen Park of the Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone” in 2023 represents an important step for mutually beneficial cooperation and coordinated promotion of scientific and technological innovation between Shenzhen and Hong Kong. The plan focuses on cultivating innovative talents, including introducing key research projects and establishing research institutes. This provides policy support for training high-end innovative talents in vocational education and promoting the construction of an open innovation community for both regions.

Formation of a multi-layered nested structure system for vocational education cooperation in the Greater Bay Area. The analysis of vocational education cooperation in the Guangdong-Hong Kong-Macao Greater Bay Area reveals a multi-layered nested structure. Firstly, in policy formulation, a multi-level intergovernmental cooperation has been established. The three regions and nine cities in the Greater Bay Area have different administrative levels, city system environments, and significant legal jurisdiction differences. These differences lead to limited effectiveness in the institutional design and policy framework of vocational education, making cross-regional administrative boundary cooperation a primary challenge. Equal horizontal cooperation among governments at the same level and multi-level governance cooperation in vocational education reflect the collective action of institutionalized cooperation. This involves coordinating and integrating policy-making, top-level cooperation design, and recognizing framework content through regular exchange and consultation, forming sustainable joint actions.

Secondly, resource complementation is achieved in inter-school cooperation. The educational resources in the Greater Bay Area have formed a vast flow space, with different scales and development stages of vocational education institutions in the three regions. Establishing an international education demonstration zone requires cross-border student exchange, faculty exchange, and joint construction and sharing of discipline fields. The Hong Kong Vocational Training Council, coordinating relevant vocational training institutions, has reached cooperation agreements with universities, such as course collaborations with Shenzhen Polytechnic. Shenzhen Polytechnic and Macau University of Science and Technology signed a friendly cooperation agreement to explore new modes of tourism education cooperation between Shenzhen and Macau. Guangzhou vocational colleges in construction-related fields and the Hong Kong Institute of Construction jointly

established training bases. Enhancing inter-school cooperation is essential for forming core competitiveness among institutions.

Finally, cross-border school-enterprise cooperation forms multi-type cooperative organizations to achieve the integration of industry and education. Vocational education institutions in the Bay Area, along with relevant industries and enterprises, jointly form a high-quality industry-university-research talent training chain. Shared training bases are built by schools, local governments, vocational colleges, non-governmental organizations, and industry enterprises, forming multi-type cooperative organizations. The boundaries of governance in multi-layered nested vocational education cooperation are blurred, with friendly interactions among government, educational institutions, and the industry forming a diversified cooperation network. This network features multiple types, broad scope, and diverse participants in regional vocational education cooperation. Policy formulation is not solely intergovernmental cooperation; the involvement of educational institutions or industry enterprises promotes a multi-network relationship. For example, the governance of vocational education in Hong Kong is undertaken by the Vocational Training Council, which collaborates with the industry to establish friendly interactive relationships among industry enterprises, government, and colleges, coordinating interests and understanding the needs of the government, industry enterprises, vocational education institutions, and colleges. Resource complementation should break through the barriers between schools and industries, facilitating collaboration and mutual benefit across sectors.

Practical Models for the Development of Regional Vocational Education Standards

Comprehensive integration: The New York, San Francisco, and Tokyo Bay Area Models. The vocational education cooperation models in the New York Bay Area, San Francisco Bay Area, and Tokyo Bay Area exemplify comprehensive integration. Firstly, the alignment of curriculum and integration between higher vocational education and higher education can be seen in these regions. The New York Bay Area is renowned for its university alliances, with 40 community colleges and technical institutes offering vocational education across the region. Within the State University of New York (SUNY) system, there is a well-functioning cycle between community colleges and four-year universities, facilitated by transfer agreements that align their curricula.

Secondly, higher vocational education alliances provide a foundation for mutual recognition of professional and course credits. California, home to 120 community colleges, is the most developed region for higher vocational education in the San Francisco Bay Area. Under national policies and private sector support, a mature intercollegiate alliance cooperation model has been established. This cooperation is managed by two main bodies: the Community College Board, responsible for resource allocation and development planning among community colleges, and the California Community College Foundation, a private organization that assists with resource integration and sharing among community colleges.

Lastly, internship standards can draw on the achievements of school-enterprise collaboration in the Tokyo Bay Area. The vocational institutions in the Tokyo Bay Area, including junior colleges, technical colleges, and specialized training schools, benefit from significant corporate investment in research, fostering the conversion of research results into practical applications and talent cultivation. National laws such as the “Industrial Education Promotion Act” and the “Vocational Training Act” provide legal guarantees for the conversion of these research achievements.

Practice-oriented: ASEAN model for regional vocational education teacher standards. Established in 1967, ASEAN is an economic cooperation organization in Southeast Asia. In 2017, ASEAN countries promulgated the “Regional Professional Standards for Vocational Education Teachers” to enhance teacher quality. This framework consists of three parts: personal and social competencies, education and pedagogy, and technical skills. Each part is described through competency indicators and descriptions, supporting the corresponding knowledge, skills, and attitudes. This standard, revised over two years with contributions from experts and research across ASEAN countries, has received unanimous recognition from education departments in these countries. It emphasizes the development of professional skills, knowledge, and attitudes in real teaching contexts.

Moreover, the standard strengthens the certification process among vocational education teachers in the member countries, enhancing the relevance of teacher qualifications. This has led to the formation of a common teacher education and training system and framework across the region, promoting vocational education development. ASEAN vocational education teachers follow two academic pathways: a parallel path and a supplementary path, allowing for flexibility in addressing individual differences among teachers. Teachers must have two to three years of enterprise work experience before teaching and must continuously update their knowledge of new enterprise technologies to maintain close ties with the industry. For teacher candidates without specific vocational qualifications, the dual curriculum pathway combines vocational skills training with teaching knowledge. For teachers already possessing vocational skills and relevant degrees or certificates, the focus is on quickly acquiring vocational education teaching theory.

Dual system talent cultivation: The Jiangsu model for provincial vocational education standards. The “Dual System Vocational Education Talent Cultivation Guide” is the first dual system vocational education standard in China to elevate from the municipal to the provincial level. The Jiangsu model is based on the German dual system of vocational education. In the process of “standardization”, it has formed a modern apprenticeship standard chain, promoting the coordinated development of modern apprenticeships, corporate colleges, and school-enterprise cooperation. The standard development includes quality, industry, and professional standards, constructing a dual system talent cultivation standard system that aligns with regional industrial chains. Led by Suzhou Chien-Shiung Institute of Technology, this model addresses local industrial development needs and provides a “Suzhou example” for national industry-education integration. Vocational colleges in Suzhou have expanded standard construction to the quality domain of vocational education, including curriculum development, teacher training, and practical training construction, thereby building a high-quality local vocational education standard system.

Structural Challenges in the Development of the Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

Unclear Stakeholders in the Development of Vocational Education Standards

The “Opinions on the Formulation of Professional Teaching Standards for Secondary Vocational Schools” and the “Notice on the Preparation of <Professional Teaching Standards for Higher Vocational Schools>” issued by the Ministry of Education clearly stipulate that the development of relevant professional settings, professional catalogs, and professional teaching standards should be completed by the industry teaching steering committees commissioned by the Ministry of Education. However, such professional vocational education standard development organizations have not yet been established in the Guangdong-Hong Kong-Macao Greater Bay Area.

Forming a team of enterprise experts, vocational education experts, and education-related personnel familiar with the educational laws, policies, and governance systems of the three regions presents significant challenges.

Ambiguous Mechanism for Developing Vocational Education Standards

From an overall goal perspective, the development of standards in the Greater Bay Area lacks a framework for collective dialogue and action. The standard-setting process requires a comprehensive consideration of the economic development levels of each region, systematic allocation of vocational education teaching resources, quality control throughout the process, standard development procedures, and balancing relationships among various organizations. However, administrative boundaries complicate the integration and cooperation goals in the formulation of professional standards and teacher standards among different levels of government. Additionally, the vocational education field lacks coordinating institutions for dialogue, negotiation, and coordination, making it difficult to form effective unified decisions in the short term. There is also a lack of normalized working and operational mechanisms for the development of vocational education standards. Spontaneous organizations cannot independently coordinate vocational education supply-side issues, and the long-standing demand for a top-level vocational education standard system requires government-driven efforts to complete qualification frameworks, credit recognition, and teacher standards.

Significant Differences in Resource Endowments for Developing Vocational Education Standards

The premise for developing an educational standard system is the integrated development of vocational education in the Greater Bay Area. Resolving the issues of uniformity and flexibility in vocational education standards at the regional and school levels has been a long-standing challenge in the implementation of professional teaching standards. Currently, the legal systems, school-running systems, and educational management mechanisms differ across Guangdong, Hong Kong, and Macao. Integrated vocational education requires the coordination of the needs of vocational education authorities in the three regions, emphasizing the concept of symbiotic integration and achieving resource sharing. The Greater Bay Area has unique regional characteristics, with two systems and three customs areas. Currently, the government-driven educational clusters have initially achieved cooperation in industry-education integration, construction of training bases, and joint teacher training. However, such point-to-point exchanges and cooperation cannot overcome fundamental barriers such as differences in educational philosophies and cultural differences. Vocational colleges operate under different evaluation systems, and the sense of community among students is not strong. Establishing a unified standard and a mechanism for mutual recognition and exchange to bridge these differences is challenging, impacting the determination of standards for unified talent allocation.

First, there are differences in the vocational education systems of the three regions. Guangdong and Hong Kong have relatively mature and scaled vocational education systems, while Macao's vocational and technical education structure is incomplete and smaller in scale. Hong Kong has 13 post-secondary colleges offering associate degree and bachelor's degree courses. The educational system includes primary, secondary, and higher vocational education, with higher vocational education pathways leading up to postgraduate degrees. Some higher education institutions in Macao offer degree programs with vocational and technical education attributes, awarding corresponding diplomas and degrees.

Second, there are differences in vocational education governance mechanisms among the three regions. Guangdong's vocational education is governed hierarchically by the Ministry of Education and provincial education departments. Hong Kong's vocational education operates under a decentralized governance structure.

The Vocational Training Council (VTC) serves as the coordinating and management agency for vocational education, enjoying autonomous management rights and school-running autonomy. The Hong Kong SAR government does not intervene in the daily affairs of the VTC. The VTC establishes professional management committees for equal dialogue with the government, playing a crucial role in connecting vocational education with the government and society. The Employees Retraining Board (ERB) is responsible for retraining affairs in Hong Kong, acting as a social intermediary that coordinates, allocates funds, monitors, and appoints training institutions to provide retraining courses. The Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) is responsible for the assessment and quality supervision of vocational training in Hong Kong. As an independent statutory body, HKCAAVQ serves as the executing body for the qualification framework, undertaking part of the government's administrative oversight authority.

Third, there are differences in the alignment of vocational education with regional economic needs among the three regions. Vocational education in the three regions serves the pillar industries of their respective cities. Guangdong's vocational colleges have distinct regional advantages: Dongguan and Foshan focus on advanced manufacturing, Guangzhou develops high-tech, information services, exhibitions, and cultural creativity, while Shenzhen specializes in artificial intelligence, mechanical manufacturing, finance, and logistics. Hong Kong's pillar industries are finance, tourism, trade, and professional services, with specialized fields in finance, commerce, tourism, cultural creativity, health care, and innovation technology. Macao's vocational education primarily serves its dominant gaming industry, with a focus on conventions and exhibitions, gaming tourism, medical health, and cultural creativity.

Insufficient Support for Industry-Education Integration Governance in the Greater Bay Area

The forms of school-enterprise cooperation in the Greater Bay Area are loose. Initially, vocational education collaboration was characterized by the establishment of vertical industry alliances or point-to-point industry-education alliances among universities. These alliances, lacking policy or legal guarantees, were mostly spontaneously formed by vocational colleges in the three regions. Without legally binding cooperation agreements, the depth and breadth of cooperation are limited, and such alliances can only be considered pilot collaborations without achieving synergistic effects. Cooperation in the exchange and sharing of vocational skills training bases and resources among the three regions has been slow. The lack of coordination in the construction of think tanks in vocational colleges, project application, data sharing, personnel mobility, and result transformation and evaluation leads to limited resource sharing. There is insufficient emphasis on the governance logic of industry-education integration, with unclear governance goals and a need to elevate governance positioning.

The fundamental reasons lie in the lack of basic systems:

(1) The system for enterprise participation in vocational education needs optimization. Some enterprises in the Greater Bay Area are not proactive in participating in cross-border vocational education integration, mainly due to a lack of supportive measures, systematic approaches, and operational feasibility.

(2) The property rights system needs improvement. When co-establishing industry colleges and creating cooperation platforms, the regions lack institutional bases for setting up mixed-ownership property rights, defining rights and interests boundaries, and regulating equity withdrawal.

(3) Industry-education integration involves the cross-border flow of human, material, and financial resources, and institutional barriers are the primary obstacles to efficient flow that need to be overcome.

Pathways for the Development of the Vocational Education Standard System in the Guangdong-Hong Kong-Macao Greater Bay Area

Establishing an Institution for Developing the Vocational Education Standard System

Modern vocational education in the Guangdong-Hong Kong-Macao Greater Bay Area operates on “intersecting levels”. Vocational technical standards, as quasi-public goods, belong to social governance. The levels of vocational education span public and private institutions, provincial and municipal jurisdictions, with distinct and identifiable divisions of labor, continually providing talent support for industrial development.

Internationally, there are similar standard-setting practices among regions, such as the European Qualifications Framework and the Washington Accord. These standards aim to achieve talent cultivation and certification within specific regions. In regional standard development led by the government and involving industries, coordinating the demands of employers of different sizes and regions and balancing the interests of enterprises and schools become core issues.

A specialized committee or research and development center for vocational education standards in the Greater Bay Area should be established to oversee the development of these standards. This committee should include representatives from the governments, educational and scientific organizations, entrepreneur associations, labor and social security departments, and public organizations of the nine cities in the Greater Bay Area. Where possible, a vocational qualifications committee should be set up within this framework, with the entrepreneur association acting as an intermediary to consolidate relationships among employers, trade unions, and government agencies, and lead the analysis of vocational competencies. The labor and social security departments of the Greater Bay Area should jointly discuss the development of vocational qualifications, labor remuneration, and employment policies, ensuring organizational support and scientific development of vocational education standards.

Constructing a Framework for the Vocational Education Standard System

The vocational education standard system embodies the main line of industry-education integration, with each standard supporting the others and serving different functions throughout the talent cultivation chain. This system connects schools, government, and employers, defining the level requirements for the same or similar professions across secondary vocational education, higher vocational education, vocational undergraduate education, professional master’s degrees, and professional doctorates. It unfolds at both macro and micro levels:

At the macro level. The vocational education national standard framework in the Greater Bay Area consists of four main parts:

Employment Determination Standards. Focusing on vocational skills, these standards specify the technical skills and professional ethics required for vocational technical talent.

Talent cultivation standards. It includes professional settings, school-running standards, teaching standards, and graduate quality standards.

Vocational skill level standards. It defines the professional technical capabilities that vocational talent should acquire, with certification as the main assessment level.

Financial funding and subsidy standards. It concerns the financial support for talent development.

At the micro level. The vocational education standard system in the Greater Bay Area aligns with the national vocational education standard system:

National vocational standards as meta-standards. It aligns with industrial economic development needs and specifies the professional competencies required for practitioners.

School-running standards for vocational education institutions. It includes hardware standards (school size, training facilities, teaching resources) and software standards (faculty standards, teaching materials, digital teaching standards). Faculty standards cover teacher-student ratios, qualifications, and ranks. Teaching standards include curriculum materials and practical teaching ratios, with digital teaching standards reflecting the shift towards AI in education.

Teaching standards. It covers course offerings, internships, industry-education integration, and practical training standards.

Quality assurance standards. It stipulates graduation requirements, professional knowledge, and vocational skills acquisition, with government-established financial subsidies for per-student funding and public expenses.

Interlinking the standards. The professional competency standards for vocational technical talent form the basis for professional teaching standards, emphasizing an activity-oriented and competency-based approach that highlights mainstream new technologies and skills. For example, Hong Kong's logistics industry established a "Logistics Industry Training Advisory Committee" that sets competency standards for six subfields, comprising industry knowledge, professional skills, and soft skills. These standards are officially issued by the SAR government and implemented within the industry. Professional qualification and level certificates clarify the training objectives and teaching content, ensuring precise alignment between vocational standards and talent cultivation. Similarly, the functional standards in logistics are aligned with course standards, detailing administrative, marketing, and operational roles, providing evaluation criteria based on job difficulty and responsibility levels. Vocational colleges in the Greater Bay Area should base their talent cultivation plans on these vocational standards, with continuous updates in teaching content and professional teaching standards driving the iterative upgrade of vocational standards. Students or trainees meeting these competency standards can apply for qualification recognition. These regional vocational standards should exceed the minimum requirements set by national standards while reflecting the unique characteristics of the Guangdong-Hong Kong-Macao region. They should focus on the alignment between different levels of vocational education and higher education standards.

Role of Intermediary Organizations in Developing the Vocational Education Standard System

Drawing from the German experience in vocational education standards development, industry associations should participate in standard governance:

Aligning with national vocational education standards. Leading enterprises and training evaluation organizations should be mobilized to proactively consider and develop high-quality standards as future industry norms. To ensure recognition of certificates across the three regions, the validity, usage scope, and salary levels associated with vocational qualification certificates should be clarified.

Incorporating training evaluation institutions. Intermediary organizations should include these institutions in certificate development, incorporating technical standards from leading enterprises to enhance certificate authority.

Government support and regulation. The government should support intermediary organizations and vocational training evaluation organizations, increase oversight and evaluation of their certificate development, and establish an elimination mechanism.

Supervising enterprise compliance. Intermediary organizations should supervise enterprises to ensure they complete the training plans stipulated in vocational standards, fulfilling internship and training base construction standards.

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