

# Study on the Integration of Vocational Education Qualifications in Guangdong-Hong Kong-Macao Greater Bay from the Perspective of Technological Logic

Jun Wu

Guangdong Vocational College of Post and Telecom, Guangzhou 510630, China

---

**Abstract:** Qualification integration is the key to building a modern vocational education system. This study firstly analyzes the necessity of vocational education qualification integration in the Guangdong-Hong Kong-Macao Greater Bay Area. Secondly, it traces the technical theories of vocational education qualification integration from the perspectives of technological philosophy, technological practice, technological tools, and technological complexity. Then, based on the comparison of institutional logic and technological logic, it explores the essence of vocational education qualification integration in the Greater Bay Area from the perspective of technological logic. Finally, it proposes practical pathways for vocational education qualification integration in the Greater Bay Area, focusing on the integration of learning and training, integration of vocational and general education, and integration of course and certification.

**Keywords:** Greater Bay Area, Vocational Education, Qualification Integration, Technical Logic, Practice Path.

---

## 1. Introduction

The integration of vocational education qualifications is crucial for establishing a modern vocational education system. This is evident from various perspectives, including party and national policies, the Guangdong-Hong Kong-Macao Greater Bay Area context, and the driving forces for vocational education development in this region. From the standpoint of party and national policies, the 19th National Congress of the Communist Party of China emphasized the need to “improve the vocational education and training system.” Additionally, the 14th Five-Year Plan underlines the importance of “deepening the integration of vocational education and popularization.” Regarding the Guangdong-Hong Kong-Macao Greater Bay Area, the sixth Southern Education Conference, held in 2018, emphasized the establishment of a “method for credit and academic qualifications mutual recognition and qualification framework within the Bay Area.” The Outline of the Development Plan of the Guangdong-Hong Kong-Macao Greater Bay Area (2019) aims to “improve the international talent training model, strengthen international exchange and cooperation of talents, and promote international mutual recognition of professional qualifications.” Moreover, the Implementation Plan on Promoting the Professional Title Evaluation and Professional Qualification Recognition in the Guangdong-Hong Kong-Macao Greater Bay Area of Guangdong Province highlights the recognition, accumulation, and transformation of learning achievements to facilitate the mutual recognition and exchange of credits, academic qualifications, degrees, and skill levels. Xu Ling, a member of the National Committee of the Chinese People’s Political Consultative Conference, proposed the establishment of a pilot zone for vocational education reform in the Guangdong-Hong Kong-Macao Greater Bay Area. This would expand the depth and breadth of vocational education cooperation through mutual recognition of vocational qualifications, ultimately leading to the integration of certificates and academic qualifications. These instances collectively demonstrate the significance of

integrating vocational education qualifications, not only in response to party and national policy requirements but also to meet the practical needs for the development of vocational education in Guangdong, Hong Kong, and Macao. Such integration not only contributes to the high-quality development of vocational education but also plays a critical role in fostering a vocational education talent hub in the Greater Bay Area and serving the economic and social development of this region.

## 2. The Technical Theoretical Origins of the Integration of Vocational Education Qualifications

### 2.1. Philosophical Theory of Technology

The philosophical theory of technology mainly emphasizes technology as a practice, stating that its essence lies in practice [1]. This viewpoint aligns with the theory of technological practice. Consequently, technology belongs to the realm of materialism. Regarding the philosophical analysis of technology, Karl Mitcham from the United States believes that technology encompasses four aspects: objects, activities, knowledge, and will. This perspective inspires to understand technology as a practice.

### 2.2. Theory of Technological Practice

“Technological practice” is one of the research areas within the philosophy of technology. “Skills, organization, and culture” are key dimensions of technological practice. Technological practices involve various elements, including occupational division of labor, professional requirements, norms, and standards. Occupational competency standards reflect the logic and evolution of technological practice, guiding the return to human essence in technological practices, driving the transformation from technological tools to intelligence, influencing the shift of technological practice objects towards informatization, and collectively promoting the continuous learning of technological practice methods.

### 2.3. Theory of Technological Tools

As digital technologies such as artificial intelligence deeply integrate into vocational education, the vocational education system is undergoing constant changes. While technology brings convenience to vocational education, it also poses threats. Notably, the threat brought by the theory of technological tools is prominent. The theory emphasizes rationality and advocates the instrumental significance of technology and methodological aspects [2]. In the current context of the vocational education system, this inclination towards the theory of technological tools is apparent, excessively valuing the utilitarian nature of technology while neglecting its cultural effectiveness. This leads to the disorder phenomena “technology worship” within the vocational education system.

### 2.4. Theory of Technological Tools

Technology is complex, and this complexity is an unintended consequence resulting from the specialization, scientification, socialization, and contextualization of technology itself [3]. The complexity of technology encompasses not only its inherent complexity but also the interaction between technology and humanities, social sciences, natural ethics, and other domains. Regarding vocational education qualifications, their grading and integration must be approached from a technological perspective, adhering to the complexity of technological knowledge and technological activities. It is necessary to develop qualification frameworks and research qualification integration from the perspective of technological complexity.

Therefore, these theories complement each other and provide different perspectives for understanding the technological theories of integrating vocational education qualifications. The philosophical theory of technology explores the essence and classification of technology, while the theory of technological practice focuses on the characteristics and impacts of technological practices. The theory of technological tools emphasizes the utilitarian nature of technology and its cultural effects, while the theory of technological complexity recognizes the multi-faceted complexity of technology. By combining these theories, a more comprehensive understanding of the technological issues in the integration of vocational education qualifications can be achieved, providing guidance for relevant policies and practices.

## 3. The Technical Logic of Vocational Education Qualification Integration In the Guangdong-Hong Kong-Macao Greater Bay Area

### 3.1. The logic of vocational education qualification integration

Logic is the fundamental study of the development laws of things. First and foremost, the integration of vocational education qualifications requires an understanding of its intrinsic logic. Intrinsic logic refers to the internal relationships that need to be clarified for the integration of qualifications, involving framework structures, qualification frameworks, and so on [4]. For example, the intrinsic logic of the National Qualifications Framework (NQF) comes from its design features, such as its flexible pathways and the establishment of equivalence between different qualifications.

Therefore, intrinsic logic is often regarded as the starting point of logic, whether it is the European Qualifications Framework (EQF), the Degree Qualifications Profile (DQP) in the United States, the Australian Qualifications Framework (AQF), the German Qualifications Framework (DQR), or other national or regional qualification frameworks. The operational logic revealed by these frameworks always starts from internal logic.

As Jian Min pointed out, in order to promote the integration of different types of vocational qualifications, it is necessary to conduct in-depth research on the structure and relationships among the intrinsic elements of vocational education qualification integration [5]. Similarly, the research by Sherry Hua and Tang Hui (2021) also suggests that the starting point of the logic of the vocational education system lies in the articulation of levels and the integration of types [6]. The success of the German vocational education system lies in its vertically articulated and horizontally integrated educational pathways. In addition, numerous scholars have studied the internal logic of qualification integration from dimensions such as qualification standards, content systems, level descriptions, and 1+X certificates. Secondly, institutional logic refers to external systems and policies, including the systems and policies of specific institutions. Without measures supported by the institutional logic of the reform environment, qualification integration cannot be achieved. Only with effective institutional design can institutional utility be realized [7]. Institutional logic includes educational logic (in line with the human resources development strategy) and training logic (in line with the national skills development strategy), with policy breadth as the dimension [8]. Institutional logic originates from different stakeholders such as central and local governments, schools, and the public. The coordination of educational governance is not a problem that can be simply solved by institutions alone.

### 3.2. Technical Logic of Vocational Education Qualification Integration

Based on the comprehensive analysis of the two types of logic mentioned above, institutional logic can be seen as an extension of intrinsic logic. Existing research has mostly focused on institutional logic to explore how to achieve vocational education qualification integration. Although this approach has partially addressed the institutional challenges in vocational education, it has also highlighted the escalating internal logic issues. Internal logic, as the fundamental logic driving vocational education qualification integration, represents the laws of vocational education development. Neglecting this aspect can hinder institutional improvements.

Therefore, in the context of vocational education qualification integration, the emphasis is primarily on exploring the technical aspects of the problem. Technical logic is considered the starting point of the internal logic and even the entire logic of vocational education. Essential issues related to the nature of technical practice, technology-oriented tools, and technological complexity need to be addressed in the vocational education qualification integration of the Guangdong-Hong Kong-Macao Greater Bay Area. The focus is on how to further refine vocational education qualification integration and strengthen learning outcomes from a technical logic perspective.

## **4. Technical Logic Practice Paths for Vocational Education Qualification Integration in the Guangdong-Hong Kong-Macao Greater Bay Area**

### **4.1. Learning and Training Integration**

Learning and training integration refers to the combination of school education and vocational training, leveraging the strengths of both to complement each other and promote the improvement of the modern vocational education system and lifelong learning for all citizens. However, in general, academic education is considered the “long leg”, while vocational training is considered the “short leg”. Academic education has a well-established long-term development system, while the vocational training system is incomplete. Therefore, in the Greater Bay Area, it is necessary to extensively expand the learning and training integration in vocational education from two perspectives: Firstly, establish an institutional system for learning and training integration, promoting the coexistence of academic education and vocational training. Incorporate learning and training integration into the strategic goals of school development and provide supporting institutional measures for the development of vocational training. Secondly, improve the technical system of learning and training integration. Based on different levels and practical characteristics, integrate, and connect pathways, organizations, faculty, curriculum, resources, and more, to achieve a true two-way interaction between academic education and vocational training. Thirdly, establish a guarantee system for learning and training integration. Learning and training integration involves multiple technical aspects and challenges, requiring organizational support for smooth implementation. It is necessary to deploy professional technicians to address platform construction, system maintenance, technical obstacles, consultation, and other related matters of learning and training integration.

### **4.2. Vocational and General Education Integration**

Vocational and general education integration is an important choice in the construction of the vocational education system. It refers to the mutual integration of vocational education and general education. In 2022, the new version of the Vocational Education Law formally established the integration of vocational and general education in the form of legislation for the first time. The technical practice path for vocational and general education integration in the Greater Bay Area is as follows: Firstly, consider the technical connectivity of vocational and general education in the top-level institutional design. The roles of technology in general education and vocational education are not the same. General education emphasizes technological knowledge, while vocational education focuses more on technological operations. It will be crucial to effectively connect the two and establish teaching objectives that prioritize this integration. Secondly, consider the hierarchical nature of technology in the curriculum and teaching process. Technology is complex and hierarchical. Although vocational and general education are different in nature, due to the varying levels of learning difficulties, it is important to implement differentiated teaching practices in the curriculum to facilitate the integration of vocational and general

education. Thirdly, enhance the technological competence of teachers in vocational and general education integration. The effectiveness of vocational and general education integration ultimately depends on the technological competence of teachers. The level of teachers’ technological competence determines the depth of students’ learning. Therefore, it is important to promote collaboration and resource sharing between vocational colleges and general education teachers and enhance the technological concepts and practical capabilities of vocational and general education integration.

### **4.3. Course and Certification Integration**

Course and certification integration is a key measure for the integration of vocational education qualifications and plays a crucial role in promoting the 1+X certification system and credit bank system in vocational education. Currently, course and certification integration is a focal point in the digitalization process of vocational education. However, it faces challenges such as inconsistent goals, adaptation deviations, and low recognition. Therefore, the practical path of course and certification integration in the Greater Bay Area should consider the following: Firstly, consider technical factors in teaching objectives. There is a conflict between curriculum objectives and certification objectives, so it is important to organically integrate the two and deeply consider the technical implications and technical abilities of curriculum objectives and certification objectives. Secondly, enhance the enthusiasm of teachers toward course and certification integration. The existing course and certification integration undoubtedly increases the teaching pressure on teachers, resulting in many teachers being unwilling to engage in course and certification integration or even unwilling to change the existing curriculum content system. Therefore, it is necessary to not only set good performance incentive goals and assessments but also enhance individual capabilities for course and certification integration. Thirdly, enhance the social recognition of course and certification integration. The key to the course and certification integration lies in considering the alignment standards of talent skills internally and assessing the achievement of objectives. This requires starting with the conditions for qualification integration and continuously considering the degree of connection between the technological needs of enterprises and the technological training provided by schools. Then, a relatively unified analytical framework can be used for integration.

## **5. Conclusion**

Qualification integration is the key to the high-quality development of vocational education and an important issue that needs to be addressed in the construction of the Greater Bay Area as a talent hub for vocational education. To effectively solve the issue of qualification integration in the Greater Bay Area, it is necessary not only to learn from advanced experiences of qualification integration in vocational education domestically and internationally but also to have a deep understanding of the practical problems in qualification integration in the current context of the Greater Bay Area. Starting from technical logic, it is essential to identify the internal key elements of qualification integration in vocational education in the Greater Bay Area and proceed with the three practical paths: learning and training integration, vocational and general education integration, and course and certification integration. Only by doing so can we

effectively address the theoretical and practical challenges of qualification integration in vocational education in the Greater Bay Area and promote the high-quality development of vocational education in our country.

## Acknowledgment

This work is supported by the Youth Project of Guangdong Higher Education Association (22GQN58), the project of the Professional College Education Professional Teaching Guidance Committee of the Ministry of Education (JYJZWGGK-2023B-15), and the project of Guangdong Talent Research Association(GDSRCYJH2021-04).

## References

- [1] Shi, H. B. (2021). Philosophical Reflections on Technology: The Logical Path of Undergraduate Vocational Education. *Vocational and Technical Education*, 42(10), 12-17.
- [2] Xiao, F. X., & Fu, X.Q. (2018). The Technical Practice Logic of the Evolution of Occupational Competency Standards. *Journal of Southwest University (Social Sciences Edition)*, 44(06), 45-50+189-190.
- [3] Deng, X. D. (2018). A Study on the Technical Logic of National Qualifications Grading. (Doctoral dissertation). Tianjin University.
- [4] Blom, R., Parker, B., & Keevy, J. (2007). The Recognition of Non-formal and Informal Learning in South Africa. Saqa.
- [5] Jia, M. (2021). Operational Logic and Practical Strategies for National Qualification Integration: An Analysis Based on "Professional Experience". *Vocational Education Forum*, 37(04), 6-12.
- [6] Xie, L.H., & Tang, H. (2021). The Core Foundation and Implementation Path of Germany's Articulation and Integration of Vocational Education System. *Research in Higher Education*, 42(06), 99-109.
- [7] Li, Y.P., & Zheng, S.Y. (2019). System Utility: The Logic of Germany's High-Quality and Sustainable Development of Vocational Education. *Comparative Education Research*, 41(10), 105-111.
- [8] Keevy, J. A. (2005). A Foucauldian Critique of the Development and Implementation of the South African National Qualifications Framework. University of South Africa.