

Optimization and Practical Analysis of Talent Training Mode of Deep Integration of Vocational Education and Production

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Abstract: To analyze the internal mechanism and construction mechanism of the integration of production and education, it is necessary to understand and reflect the integration policy of production and education. This paper systematically combs the development course of education integration policy since the founding of China, summarizes the characteristics of production and education integration in different periods, analyzes the law of production and education integration construction, and provides the basis for the construction of a new pattern of development of production and education integration in higher vocational colleges in the new period. Then, combined with the development of vocational education and economic construction in Guangdong Province, this paper discusses the effective path of the talent training mechanism of the integration of production and education in Guangdong Province, hoping to lay a foundation for promoting the reform of higher vocational education in Guangdong.

Keywords: Integration of production and education; Development course; Current situation review; Future outlook

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1. Introduction

Deepening the “integration of production and education” has become the consensus of the development of higher vocational education in various countries, and China has vigorously promoted the integration of production and education in the process of developing vocational education. In October 2021, the General Office of the CPC Central Committee and The General Office of the State Council issued the Opinions on Promoting the High-quality Development of Modern Vocational Education, which pointed out that “adhere to the integration of industry and education^[1], school-enterprise cooperation, and promote the formation of a development pattern of benign interaction between industry and education and the complementary advantages of schools and enterprises.” The new Vocational Education Law included the integration of industry and education into the scope of legal protection. To promote the standardized development of the integration of industry and education from the legal field. This paper systematically combs the development course and evolution characteristics of the integration of production and education in the past 40 years, draws experience

from it and puts forward some feasible suggestions for the development of the integration of production and education in higher vocational colleges in Guangdong Province.

2. Review of the development course of the production-education integration policy in vocational education

2.1. The embryonic period of the integration of industry and education in vocational education: Work and study (1949–1979)

In the early stage of industrialization, the country had a great demand for skilled workers, and training many skilled workers became the main task of vocational education. In December 1949, the first Education Work Conference of New China proposed to “serve workers and peasants” and “serve production and construction” as the policy of education work, which was the initial discussion on the cooperation between vocational education and enterprises and public institutions after the founding of New China. In the early 1950s, China drew on the experience of the Soviet Union in the field of education, promoted the close connection between production practice and education, and built a production practice base of cooperation and interaction between inside and outside schools ^[2]. In September 1958, the Central Committee of the Communist Party of China issued the Instruction on Educational Work, which clarified that “education should be linked with productive labor.” At that time, in addition to the full-time education system and the eight-hour working day in factories, the work-study system and the education system were also established, and many work-study schools emerged across the country. In this period, schools were generally managed by agricultural cooperatives or by schools and enterprises working and studying part-time ^[3]. Based on the social ^{background} at that time, the work-study system was very popular and cultivated many highly skilled workers for economic development and social construction. It was an early successful practice of integrating industry and education, which laid a solid foundation for further deepening the integration of industry and education in vocational education and accumulated successful experience ^[4].

2.2. School-enterprise cooperation in the early stage of exploration (1980–1990)

After the reform and opening up, all walks of life developed rapidly. Higher vocational education also opened a new chapter to meet the social demand for talent. Higher vocational education has gradually penetrated grassroots, production, service and other fields. In 1985, the first National Education Council issued the “Decision of the CPC Central Committee on the Reform of the Education System,” which trained hundreds of millions of highly educated, skilled and professional workers from all walks of life and actively opened and developed vocational and technical colleges and universities ^[5]. In 1986, the “Decision on the Reform and Development of Adult Education” ^[6] was promulgated, making the development of adult education an important manifestation of the new development pattern of integrating industry and education. Through various forms of school-enterprise cooperation, adult education can improve worker quality and enterprises’ production efficiency. It is common for enterprises to send people to schools to receive skills training, and a two-way and interactive cooperative relationship has been formed between schools and enterprises.

At this stage, school-enterprise cooperation in higher vocational education developed rapidly. Still, the work focused on scale expansion and system reform, and higher vocational colleges failed to form a clear understanding of their functions. At this time, the school-enterprise cooperation was more guided by the government, and the subjective will of higher vocational colleges and enterprises was not prominent.

2.3. The characteristic emerging: The combination of production and education (1991–2000)

Since the transformation of China's industrial structure in the 1990s, the demand for talent has changed from skilled workers to high-quality, application-oriented skilled personnel. As a result, the training mode of higher vocational colleges has also changed. In 1991, the "Decision of The State Council on Vigorously Developing Vocational and Technical Education" ^[7] made clear the development direction of "combining production and education." This was the first time China explicitly put forward the concept of "integration of industry and education" nationwide. Since then, the relationship between higher vocational colleges and enterprises has entered a new stage of development. In 1998, the Ministry of Education launched the major reform of "industry-university integration" again, readjusted the majors and courses of higher vocational colleges according to the needs of enterprises, and further improved the balance between supply and demand of talents. Since then, the mechanism of school-enterprise cooperation in running schools has become more and more abundant. In 2002, The State Council issued the "Decision on Vigorously Promoting the Reform and Development of Vocational Education," ^[8] which proposed for the first time the establishment of a "modern vocational education system." Driven by national policies and economic development, schools provide tailor-made talents for enterprises, strive to ensure the supply of human resources for enterprises and provide new services for continuous training of enterprises, innovating a form of running a school for enterprises.

At this stage, school-enterprise cooperation has gradually increased from the situation of "hot schools and cold enterprises" to the enthusiasm of enterprises, and several higher vocational colleges with distinctive characteristics and a combination of production and education have been built. However, the development of higher vocational education has not fully met the demand for high technology in our country, and there is still a large skill gap.

2.4. Quality improvement stage: Combining work with study (2005–2010)

After a series of reforms, vocational education has developed in depth. In 2005, The State Council proposed building a modern vocational education system with Chinese characteristics and independent development. Under the guidance of the policy, the quality of higher vocational education has been continuously improved, and more and more attention has been paid to connotative development. The "Decision on Vigorously Developing Vocational Education" proposes to strengthen resource integration and mechanism innovation, continue to promote the deepening reform of vocational education and build 100 high-level demonstration higher vocational colleges ^[9]. In 2008, the Ministry of Education issued "Several Opinions on Further Deepening the Reform of Secondary Vocational Education Teaching" ^[10] to resolve the contradiction between "industry" and "learning," providing some practical suggestions for resolving the contradiction between the integration of production and education. In 2010, The State Council issued the "Outline of the National Medium- and Long-Term Education Reform and Development Plan (2010–2020)," ^[11] proposing to promote the pilot reform of school-enterprise cooperation on the integration of industry and education in vocational education.

During this period, the quality of the integration of production and education in China's higher vocational education has been significantly improved, several demonstration colleges of integration of production and education have been established, and remarkable achievements have been made in the innovation of vocational education management system and the deepening of school-enterprise cooperation ^[12]. However, due to the uneven development of vocational education in different regions, the distribution of hardware and software for vocational education between regions, the unclear level of education and the large development gap between colleges and universities, the integration of production and education in higher vocational education has not been widely developed. A stable and smooth two-way integration mechanism has not been established between

higher vocational colleges and enterprises^[13,14].

2.5. The stage of in-depth development of the integration of industry and education (2012–present)

Since the 18th National Congress of the CPC, China has entered a new historical starting point. Under the new norm of the economy, the relationship between higher vocational colleges and society, economy and production is getting closer and closer. In 2013, the document “Decision of the CPC Central Committee on Several Major Issues Concerning Comprehensively Deepening Reform”^[15] was the first time to formally put forward the concept of “deepening the integration of production and education,” providing policy guidance for further breaking through the problems and contradictions in the integration of production and education in vocational education. Since then, the Ministry of Education and other joint departments have issued a series of supporting measures:

- (1) In June 2014, the Ministry of Education and five other departments jointly issued the “Modern Vocational Education System Construction Plan (2014–2020),” which clarified the work content and objectives of the vocational education system construction at this stage. The in-depth development of the integration of industry and education is the main content of this stage. The government, enterprises, vocational colleges and all sectors of society are united to create conditions for the in-depth promotion of the integration of industry and education.
- (2) In May 2019, the “Notice of The General Office of the State Council on Printing and Distributing the Action Plan for Vocational Skills Improvement (2019–2021)” proposed that the new apprenticeship and modern apprenticeship training of enterprises once again put forward clear work requirements on the integration of industry and education, school-enterprise cooperation and other aspects, and carried out detailed work arrangements^[16,17]. The post-education department successively promulgated the “Implementation Plan for Deepening the Reform of the Construction of ‘Double-qualified’ Teachers in Vocational Education in the New Era, the Action Plan for Comprehensively Carrying Out Vocational Training in Vocational Colleges to Promote Employment and Entrepreneurship (2019–2021),” and encouraged vocational colleges to open their doors by establishing employee training centers, enterprise universities and continuing education bases, etc. to provide comprehensive training for urban and rural workers^[18].

The main characteristics of this period are: higher vocational colleges in the new period to “integration of production and education” as the main direction. After the 18th CPC National Congress, a series of policies highlighted the leading position of industrial enterprises in deepening the integration of industry and education and cooperation between schools and enterprises, and the coordination between departments in policy formed a “combination,” which made the integration of industry and education achieve unprecedented development^[19].

3. Countermeasures and suggestions for the revitalization and development of higher vocational colleges in Guangdong Province during the 14th Five-Year Plan period

3.1. Optimize the structure of vocational education and reform the supply-side structure of vocational education

Guangdong has a relatively high level of economic development and has formed a relatively complete industrial system. Vocational education serves industry development and economic construction. The Guangdong region can take the lead of industry associations or leading enterprises to integrate information resources, provide information for the professional setting, construct curriculum and textbooks for vocational colleges in the

region, provide the matching degree between vocational colleges' talent training and industrial market, and alleviate the contradiction between talent supply and demand.

3.2. Deepen industrial synergy and promote the integration of vocational education and economic revitalization and development

The PRD region has a good foundation for high-tech industries and high-end manufacturing. It should avoid downgrading vocational education in the region's global value chain and becoming an "international factory." In the Bay Area, key elements such as capital, technology, talent and information are being integrated at an accelerated pace, a community of integration of industry and education is being established, and cooperation between vocational colleges and enterprises is being promoted based on the principle of joint construction and sharing, with the integration of industry and education as a breakthrough, to provide support for scientific and technological innovation, personnel training and industrial restructuring and upgrading. Under the guidance of the "14th Five-Year Plan" and the "Double High Plan," Guangdong Province should continue to promote industrial collaborative agglomeration, guide the rational allocation of industrial resources, and adjust vocational education accordingly so that vocational education can develop in the direction of cultivating compound talents, and provide a solid talent foundation for industrial collaborative agglomeration.

3.3. Optimize the layout of regional vocational education and establish a coordinated vocational education system

The development of vocational education in the Guangdong-Hong Kong-Macao Greater Bay Area is uneven across regions. Based on the upstream and downstream distribution of the industrial chain and the distribution of educational resources in the Greater Bay Area, cross-regional integration of relevant industry organizations, scientific research institutions, vocational training institutions, upstream and downstream enterprises and other resources is required to promote regional coordination of educational resources ^[20].

3.4. Promote a mechanism for cultivating innovative talents to support and lead regional development

According to the new characteristics of "production, teaching and innovation," the high-quality education system should be built to realize the high-quality education concept, educational norms, disciplines, teaching materials and courses and educational governance. It can also accelerate the construction of modern industrial colleges and promote professional upgrading and digital transformation, together with developing a system for mutual recognition of international vocational qualifications and establishing the Greater Bay Area Vocational College Alliance. By developing a high-quality vocational education resource base, launching skill competitions, building a skill certificate platform, establishing a credit and skill certificate conversion system, and building a high-quality scientific research base, the education system improves the mechanism for training skilled personnel, building a high-level technology research and development platform, fully develop students' professional skills and innovation capabilities, promote the in-depth development of school-enterprise cooperation, and improve the quality of integration between production and education, to deepen the reform of higher vocational education ^[21,22] and promote the coordinated development of higher vocational education and the economy of the Guangdong-Hong Kong-Macao Greater Bay Area.

4. Conclusion

The 14th Five-Year Plan period is important for China's new technology to lead the development of the new

economy. Under the new development pattern of the “double cycle,” the economic and vocational education development of the Guangdong-Hong Kong-Macao Greater Bay Area has great opportunities and challenges. The integrated development of industries is the key to improving the educational level of higher vocational colleges in the Guangdong-Hong Kong-Macao Greater Bay Area. It is also the basis for the vigorous development of higher vocational education. Guangdong Province should bring together the advantages of various factors, take the path of innovation-driven development, make the regional innovation system more impactful, drive the further development of higher vocational education, and make vocational education better serve the development of the Greater Bay Area.

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