A STUDY ON THE MANAGEMENT MODE OF MODERN VOCATIONAL EDUCATION IN CHINA

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ABSTRACT

Title of Dissertation	The Study on the Management Mode of Modern Vocational Education in China
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Since the reform and opening up, the management model of China's vocational education has exposed many problems and deficiencies in the process of continuous improvement. The purpose of this paper is to study the management mode of modern vocational education in China, including: 1) research on the development of modern vocational education in China after reform and opening up; 2) study the current status and management mode of vocational education management in China; 3) summarize the main aspects of modern vocational education management theory and model to optimize the management model suitable for the development of modern vocational education in China.

This paper selects the methods of qualitative research, selects the relevant responsible persons of vocational colleges, government and enterprise departments, conducts in-depth interviews on the relevant issues of China's modern vocational education management model, and combines relevant books, reports and materials to propose an optimized management mode of modern Chinese vocational education. Through qualitative analysis, we find that 1) Since the reform and opening up, the development of China's vocational education has mainly experienced the "exploration and practice stage", "the stage of vigorous growth" and "the stage of quality improvement", which has shifted from the cultivation of professional talents to the quality training; 2) The current Chinese vocational education management model mainly follows the modern apprenticeship management mode, and gradually explores the formation of vocational education group and corporate management mode. In the

quality training of vocational students, it pays attention to the implementation of talent integration projects and strengthens the combination of engineering and learning. School-enterprise cooperation to enhance the practical ability of students in vocational colleges; 3) However, there are still many problems in the management of modern vocational education in China, such as the closure of vocational education teaching mode and the simplification of management mode. In order to meet the employment needs of the new era industrial transformation and upgrading, combined with the current status of modern Chinese vocational education management, this paper proposes an innovative model to optimize China's modern education management, specifically based on the "three spirals" management theory, to strengthen vocational colleges, governments. The close cooperation of the three parties of the enterprise will give full play to their respective advantages. Including vocational colleges should pay attention to the training of dual-teachers, government departments to strengthen policy guidance, and enterprise production to play a guiding role. Promote the diversified management of vocational education, and actively attract enterprises to participate in the management of modern apprenticeships, fixed-term internships and vocational education groups in vocational colleges. Optimize the management mode of modern vocational education in China by deepening the cooperation between schools and enterprises, the combination of work and study, and the combination of production, study and research.

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CHAPTER 1

INTEODUCTION

1.1 Research Background and Significance

1.1.1 Research Background

Modern vocational education mainly includes secondary vocational education, higher vocational education and various vocational trainings in the society. It belongs to a kind of big vocational education. The State Council issued the <Decision on Accelerating the Development of Modern Vocational Education> (hereinafter referred to as the <Decision>), and comprehensively deployed to accelerate the development of modern vocational education. The <Decision> clarifies the guiding ideology, basic principles, objectives, tasks and policy measures for accelerating the development of modern vocational education in the next period, and proposes that “by 2020, the formation of adaptation needs, the deep integration of production and education, the connection of higher vocational education, vocational education Communicate with general education, embody the concept of lifelong education, and have a modern vocational education management model with Chinese characteristics and world level”. Under this background, it is urgent to study the management mode of modern vocational education in China, and explore and construct a modern vocational education management mode with Chinese characteristics.

Modern vocational colleges are an important part of higher education in China. Higher vocational college education is different from other higher education in terms of talent training target orientation, training mode and talent quality assessment. Vocational education has the characteristics of higher education with deep integration of occupations and posts and the cultivation of professional ability. It is an important type of higher education for the training of skilled and applied talents in the front line of production, construction, service and management. At present, China’s higher vocational education is mainly oriented to employment, and follows the concept of

talent cultivation combined with production, education and research. The setting requirements of higher vocational education majors should be adapted to the regional economic development and market demand changes, paying attention to the cultivation of students professionalism, practical ability, creative ability and employability. The teaching mode emphasizes student theoretical study, experiment and off-campus work practice, and internship. The combination of engineering and training in training. Vigorously promote the teaching model of school-enterprise order training, paying attention to the effective links and integration of the three key links of students experiments, training and internships. In terms of performance appraisal, the use of multiple assessment methods, such as the combination of school performance and practical results, process assessment and structural assessment, continue to innovate the talent training model.

The 19th National Congress of the Communist Party of China put forward the strategic goal of "basically achieving socialist modernization in 2035" and the strategic task of "continuing the modernization of the national governance system and governance capacity." The implementation of the "Strategy for Rejuvenating the Country through Science and Education" and the "Strategy for Strengthening the Country through Talents" must implement the priority development of education, and deploy and implement education modernization ahead of schedule. The modernization of vocational education is an important part of education modernization. Constructing vocational education governance system and improving vocational education governance ability are effective means and important guarantee for promoting the modernization of vocational education, and also an important productive force for the scientific development of vocational education. China's current economy has shifted from a high-speed growth stage to a high-quality development stage, and the industrial structure of the entire society is in the process of continuous adjustment. Traditional industries with serious pollution and backward production capacity have been gradually eliminated, and emerging industries represented by information technology, Internet, e-commerce, and finance have developed rapidly. Due to the emergence and rapid rise of emerging industries, China's demand for high-tech talents in various fields has also increased year by year, which has stimulated the development of vocational education objectively and provided a superior background for the development of China's

vocational education. As we all know, vocational education is highly practical, professional and adaptable. With the vigorous development of emerging industries, the purpose of modern vocational education is to cultivate applied and technical skills for social and economic development.

Due to the continuous adjustment of China's social structure, the development model of traditional vocational education is no longer suitable for the needs of China's economic and social development. Therefore, the development of vocational education is necessary to adjust the old development model, reorganize and construct a new education management model, in order to achieve economic and social development. Deliver more and more urgently needed professional and technical personnel. In recent years, the government has liberalized many preferential policies for vocational education colleges, which has led to a rapid increase in the number of students enrolled in vocational education institutions. China's policies have promoted the development of higher education. This shows that there are serious challenges for the development of higher education in China. The pressure on the management model is also rising. Regardless of the goal of talent training or the purpose of running a school, vocational education colleges are different from ordinary colleges and universities. There are significant differences between them. For vocational education colleges, it is mainly aimed at cultivating applied talents. To train technical talents with certain professional skills for the society, it is also decided that vocational education colleges must adjust the education management mode and talent cultivation in a timely manner according to actual needs.

Although the development time of China's vocational education is not too long, it has already revealed many shortcomings. Therefore, vocational education institutions should start from the actual needs of society, deeply study the defects in the education management model, and propose effective solutions. In short, study the practical significance of the modern vocational education model.

1.1.2 Research Significance

1) Mainly clarify the development of modern vocational education after the reform and opening up;

2) Mainly understand the current status and management mode of vocational education management;

3) It mainly proposes the management mode of modern vocational education management optimization;

1.2 Research Purposes

The purpose of research:

1) To study the development of modern vocational education in China after the reform and opening up;

2) In order to understand the current status of vocational education management and management mode;

3) Optimize the management model suitable for the development of modern vocational education in China.

1.3 Research Areas

1.3.1 Content Category

1) The development history, current situation and problems faced by China's vocational education;

2) The education management model of four vocational colleges in Beijing, as well as the defects and problems faced;

3) The functions of government and enterprises in the education management of four vocational colleges in Beijing.

1.3.2 Geographical Categories

In view of China's vast territory and numerous provinces and cities, this paper mainly focuses on Beijing. Choose four representative higher vocational colleges, Beijing Electronic Technology Vocational College, Beijing Finance and Trade Vocational College, Beijing Industrial Vocational Technical College and Beijing Agricultural Vocational College, as well as the main education authorities that guide the vocational college policy formulation and participate in school-enterprise cooperation. The main business.

1.3.3 Time Category

The time category is mainly concentrated in the period 1978-2017.

1.4 Expected Results and Innovations

Through the research of this paper, the following expected results are achieved.

1) The study found that the current development of modern vocational education in China;

2) Can study and discover the current educational management model of Beijing Vocational College and the defects and problems faced in the development of modern vocational education;

3) It can propose an optimized management mode for the current modern vocational education management.

CHAPTER 2

MODERN VOCATIONAL EDUCATION THEORY AND ITS MODEL RESEARCH

2.1 Related Research Theories

2.1.1 Triple Helix Model Theory

The Triple Helix model theory, also known as TH theory, is an innovative structural theory that became popular in the mid to late 1990s. In 1999, Henry Etzkovac first proposed the concept of "three-helix model", which was used to analyze the interaction between government, enterprises and schools in the management of vocational education by establishing a government-enterprise-school analysis paradigm. relationship. According to market demand, Leot Leyesdorff（1997）the three innovative entities of schools, enterprises and governments are connected, overlap and work together to form a new relationship of spiraling "triple spiral", called the three-helix model theory. The approximate relationship between the three is shown in Figure 2.1.

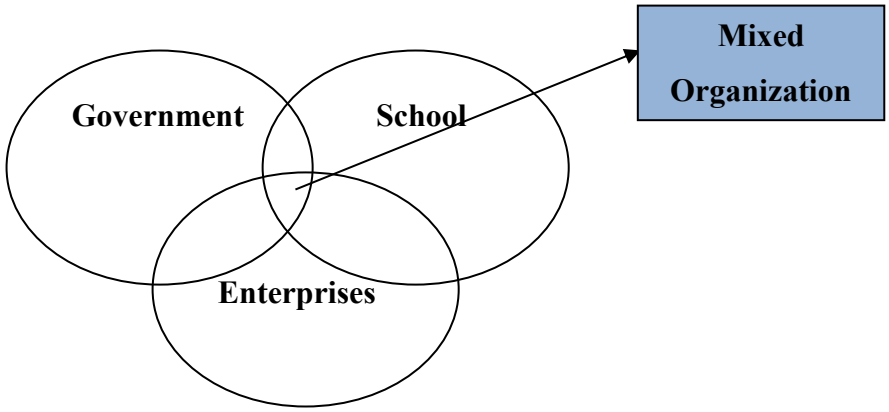

Figure 2.1 Three-Helix Model of Government, Business, and University Relations
Source: Authors draw the proceeds.

The hybrid organization shown in Figure 2.1 is formed by the overlapping of functions of schools, governments, and enterprises to meet the requirements of technological innovation and knowledge transfer. With the development of the three-helix theory, the main value of the knowledge assets of universities and scientific research institutions is to exert different value systems of government, enterprises and schools, to promote regional innovation and promote economic development, and to form three forces in the fields of administration, knowledge and production (Yulan, 2007).

Schools, as a source of new knowledge, new technologies, and natural incubators of innovative talents, are important productivity factors in the inter-organizational network of schools, governments, and businesses. The government directly provides most of the financial support for modern vocational education and creates a good social environment for development. In addition, in addition to providing financial support for vocational education, enterprises also provide teaching experiments and practice bases for vocational colleges, as well as scientific and technological achievements transformation bases. The government is the organizer and leader of social production and life, and its main role is to maintain a stable environment. By leveraging the comparative advantages of colleges and universities in the field of talents and knowledge, the government and enterprises are conducive to the support of high-quality talents and high-level scientific and technological achievements, thus promoting the coordinated development of social progress and economic development. Based on the interests of the three-helix model of career management research goals, the government, schools, enterprises and other participating entities have different interests in pursuing this goal.

As the core strength of the national innovation system, the school is a knowledge production and information dissemination organization. It has rich knowledge, technology, human resources and strong research and development capabilities. It is the link between the government and enterprises. The pursuit of the interests of the school main body is as follows: first, the scientific research results are transformed into practical application. Although the school has a strong scientific research, but only less than 10% of the research results applied to the actual industrial development, the scientific research needs to transform to the enterprise. As an

important subject of the three-helix theory—enterprise and government, they provide experimental transformation bases for their results, effectively applying the school's scientific research results, and providing a good external environment for products, such as providing new product incubators; More clear and clear research and development work, making the school's scientific research more targeted.

As a leader in social and economic development and industrial production, the government plays an important role in formulating policy orientation, providing macro guidance and effective organization and coordination of social resources. The Government's realization of the interests in the three-helix relationship is as follows: first, through the effective integration of resources to enhance the overall innovation and development capacity of the country. The second is to promote the sustainable development of the society and economy of each region by concentrating the advantages. The third is to effectively play the role of government, schools and enterprises, improve the efficiency of research and development activities, with less input to achieve greater output.

In the process of development, the company cooperates with the school and the government. The government provides good policy support for the enterprise and provides guarantee for the development of the enterprise. The school provides high-quality human resources, advanced management theory and high-quality The scientific research achievements and the improvement of the production technology chain of the enterprise enable the enterprise to establish a sound enterprise management system, innovate and improve the enterprise management concept, and effectively promote the technological production capacity and operational efficiency of the enterprise. The introduction of the three-helix theory in the higher vocational and technical education system can more comprehensively analyze the relationship between higher vocational education institutions and the government and enterprises, which is conducive to accelerating the goal of talent training in higher vocational colleges and promoting the improvement of educational management mode. Promote the cooperative relationship between higher vocational education institutions and governments and enterprises. In other words, the three-helix theory finds the bond of "market demand", which is connected with knowledge learning, technological innovation and transformation, and forms a triple spiral of three forces of school, government and enterprise that interact

with each other and form a spiral. relationship. Governments, enterprises and schools play their own different value systems, carry out benign interaction and integration development in the economic society, and form a three-in-one situation in the fields of administration, production and knowledge, and thus provide a solid foundation for economic and social development.

At present, it is the goal of modern vocational education in China to cultivate economic, technical and social skills that are necessary for the main modernization of our society. In the management of modern vocational education, it emphasizes the value orientation of meeting the needs of economic development, and pays attention to the talent training mode of relying on enterprises, taking the cooperation of industry and education, engineering and learning, and school-enterprise cooperation. Correspondingly, in the modern higher vocational education management model, it is urgent to deal with the relationship between government, enterprises and schools. Therefore, the three-helix theory has very important reference and enlightenment significance for the innovation and development of modern vocational education mode in China.

2.1.2 Vocational Education Collaborative Management Theory

The practice of modern vocational education management since the reform and opening up has a very strong policy orientation. The nature, extent, breadth and focus of vocational education management are influenced by policies related to economic, social, educational and vocational education in different periods. Guo Jing (2017) believes that these policies follow a main line, that is, emphasize the synergy of management, and continuously improve the ability of vocational education governance through collaborative management. Collaborative management of vocational education mainly includes subject collaboration, department collaboration, content collaboration and application collaboration, as shown in the figure.

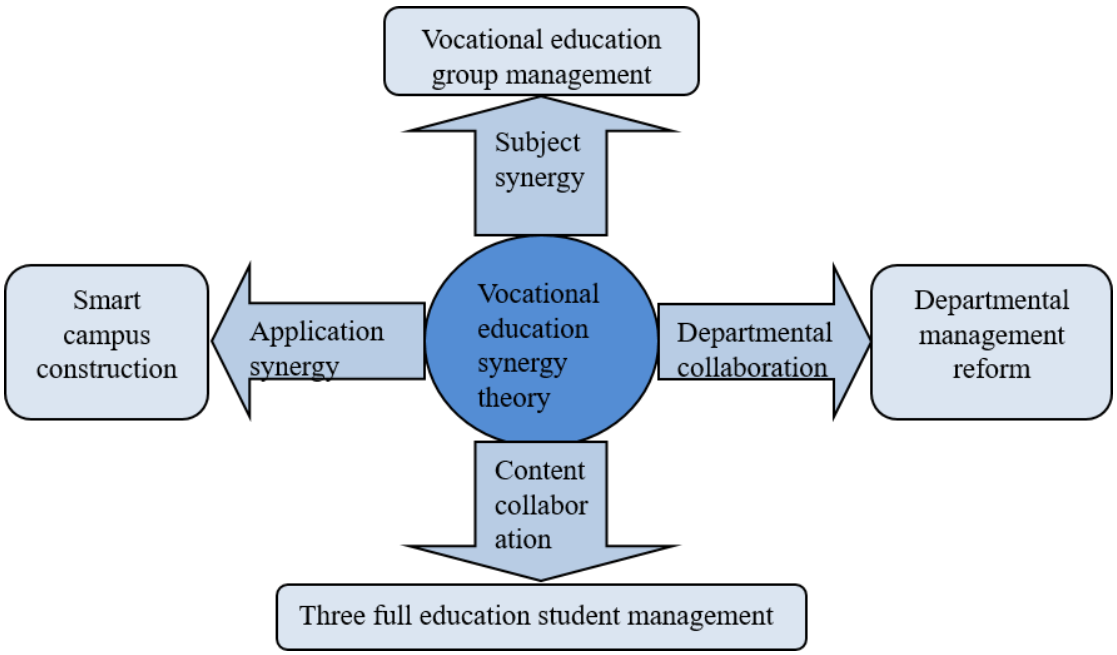

Figure 2.2 The Theoretical Framework of Collaborative Education Management
Source: Authors draw the proceeds.

The executive subjects covered by the collaborative management of vocational education include: 1) The main body coordination represented by vocational education group management. By the end of 2016, the number of vocational education groups in China reached 1,406, and the group members were 35,945, of which industry enterprises accounted for nearly 73%, including higher vocational colleges, government departments, and other organizations. In terms of the organizational structure of the vocational education group, a board of directors, a board of directors, and a management committee composed of industry, enterprises, vocational colleges, and government departments have been established as the decision-making body of the vocational education group. In terms of operational mechanism, the board of directors, the board of directors or the management committee negotiated to formulate the group charter. The charter clarifies the rights and responsibilities of each member of the group, as well as the various system norms in the operation of the group, taking the charter as the core and promoting the institutionalization and standardization of the group operation (Xu Yue, Guo Jing, 2017). Group-based education can promote the formation of a good pattern of multi-agents to promote the development of vocational education;

2) Departmental coordination represented by the secondary management reform of the department. With the deepening of the connotation construction of higher vocational colleges and the need to improve the quality of college management, many higher vocational colleges explore the implementation of the secondary management reform of “decentralized management power and lower management focus”, that is, under the unified leadership of the school, It will involve the secondary organizations in the management of school teaching, students, scientific research, teachers, finance, assets and other aspects of management, financial and personnel rights, and ensure the coordination of the rights and responsibilities of the secondary colleges. The focus is on the huge and bloated bureaucracy. The management organization is transformed into a flat organizational model, and through the coordination of the school functional departments and the secondary departments, rationalize the management system of the colleges, enhance the flexibility of school management, and build a more scientific, rational and efficient internal management of the institutions. system. The second-level management of the department explores a good model of improving the governance level of the university with departmental synergy as the carrier; 3) content coordination with the “three-round education” student management model as a typical representative. In view of the difficulties in student management in higher vocational colleges, such as long management time, wide field of activities, involving many subjects, and difficulty in coordinating and coordinating, higher vocational colleges have explored the management model of “three full education”, namely, full staff, whole process, and full Orientation, closely surrounding the “student management” work content, in the three main dimensions of management subject, management time and management space to achieve full-factor synergy, become an effective model of student management; 4) application collaboration with the representative of smart campus construction. At present, the informationization construction of vocational colleges has shown a trend of “smart” development. From the digital campus featuring “electronic, distributed, and Internet” to “Intelligent, Cloud Computing, Big Data, Internet of Things” Smart campus development. The Smart Campus pays attention to the reengineering and optimization of inter-departmental processes of the colleges and universities, realizes the data integration of inter-departmental application systems, enables the inter-departmental facilities, automatic perception and intelligent processing of the colleges and

universities, and integrates all kinds of application systems of the school into all aspects of school work. Interconnection and collaboration to significantly improve the management and operational efficiency of the institution.

Generally speaking, the policy effectiveness of vocational education is effective, and its effect is reflected in many aspects: first, the development of synergetic management policy conforms to the trend of global governance system, and builds the vocational education governance structure from the top design, which is based on pluralistic common governance and systematic cooperation. Secondly, the cooperative management policy has positive social effect, Effectively promote the industry, enterprises, research institutes, social institutions and other active concern, support and participation in the development of vocational education, to follow the law of vocational education has laid a good social foundation, the creation of a positive environmental atmosphere. Thirdly, the cooperative management policy has strongly promoted the connotation construction and scientific development of vocational colleges, and provided scientific guidance and basic observance for improving the management level of vocational colleges and speeding up the establishment of modern vocational school system (Guo, Jing, 2017).

2.1.3 Vocational Education and Social Inclusive Synergy Growth Theory

Since the 1970s, the concept of social inclusion has gradually replaced the concept of poverty in the past, because the concept of social inclusion encompasses a broader dimension of social defects (Aasland, & Flotten, 2001). For the definition of social inclusion, some scholars regard social inclusion as the provision of employment and education, while others regard social inclusion as economic productivity (Lister, 2000). The current definitions of social inclusion are representative of the European Commission and the World Bank. The European Commission defines social inclusion as a necessary opportunity and resource to ensure that those at risk of poverty and social exclusion are fully engaged in economic, social, political and cultural life, and in the society in which they live, It is considered a normal standard of living. This ensures that they have more opportunities to participate in the decision-making process that affects their lives and their basic rights (European Commission for Economic Communities, 2003). In addition, social inclusion as defined by the World Bank is a

process to improve people's capabilities, opportunities and dignity (World Bank, 2013). Vocational education has a positive impact on social inclusion. Bardak (2005) argues that an effective vocational education and training system can reduce unemployment in the face of a saturated labor market, which is costly for most people. The dual mode is the best example of vocational education and training in OECD countries, not only by imparting skills and on-the-job skills, but also by promoting individual and social life behavior among trainees (Deißinger, 2003). Vocational education and training systems can increase youth employability and thereby reduce unemployment (Meager, 2009; Preston, & Green, 2008). Similarly, people who are already employed can improve their skills through a good vocational education and training system, reducing unemployment risks and high-income jobs due to inability to meet knowledge updates (Okolocha, 2012).

Vocational education and training contribute to the distribution of benefits for business, individuals and society (Maclean, & Pavlova, 2011). Policy makers can develop their professional skills and improve their socioeconomic status through vocational education and training to offset social exclusion and promote social inclusion (European Economic Community Commission, 2007). Therefore, the OECD has increased its emphasis on redistribution through skills and education, employment and women's participation (Cohen, & Ladaique, 2018). The study was supported theoretically by human capital theory to explain how state investment in vocational education and training could lead to social integration in OECD countries. The concept of human capital explains that individual abilities are based on the training of their acquired skills (Hennessy, 2015; Marginson, 2017). The role of vocational education and training in personal socialization has been recognized by various institutions including the European Commission, the International Labour Organization and the OECD (McCoshan et al., 2008). Vocational education and training enhances individuals' qualifications and skills to improve work efficiency and earn more income in the workplace (Amado et al., 2011) and actively promote society by positively influencing work-related skills and personal and social behaviors. Inclusive (Deissinger, 2004). A higher investment in vocational education and training in an economy means that a higher percentage of individuals benefit from the opportunity to improve their qualifications and skills in professional services. Vocational education and training

enable individuals to gain access to education and lifelong learning so they can enter the labour market (Union, 2014).

Research suggests that the positive effects of vocational education and training on economic growth are regulated through social inclusion. Human capital theory helps us explain the role of education in promoting economic growth through social inclusion. Its explanation is that the high return on investment in vocational education and training means increased employability, productivity and household income, which further becomes the engine of economic growth. Investment in vocational education and training is an important tool for achieving socio-economic goals, such as promoting local economic development, actively attracting foreign investment, increasing corporate profits, prioritizing the development of the industrial sector and promoting exports (Field et al., 2009). However, due to the unfair distribution of resources (Buvinic, 2004), a large proportion of social members are still socially excluded and economic growth stagnates. In such an economic situation, development policies based on the principle of equity are the core of ensuring economic growth (Buvinic, 2004). The policy of developing human capital through investment in vocational education and training promotes the equitable distribution of resources. Human capital theory explains how investment in vocational education and training can contribute to economic growth by increasing the employability, income, and productivity of social members (Schultz, 1988; Nilsson, 2010). Based on investments in vocational education and training, people can earn their share in employment, education and health, and regain employment opportunities as a result of living standards (Rose et al., 2012). Therefore, economic development can be achieved when education and training, labour market access and employment opportunities are fully and equitably opportunities.

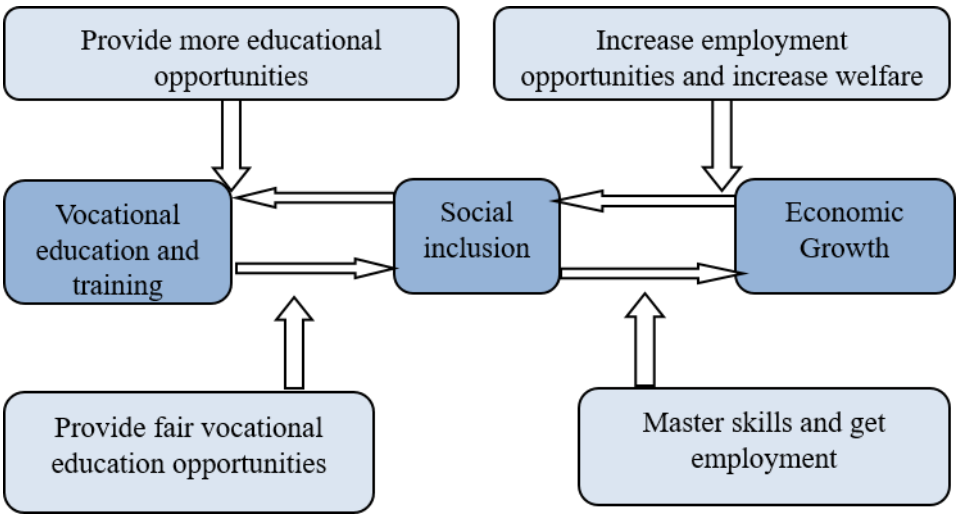

Figure 2.3 Vocational Education Training, Social Inclusion and Economic Growth Synergy Theory

Source: Authors draw the proceeds.

2.2 Research on the Management Model of Modern Vocational Education

2.2.1 PDCA Cycle Management Model

The PDCA cycle is the Deming Wheel management model, also known as the Deming Wheel or the Continuous Improvement Spiral. Deming Cycle is a quality continuous improvement model, which includes repeated steps of continuous improvement and continuous learning, namely, Plan, Ex, Check, and Process. The process improvement and immediate production involved in social production management are closely related to the Deming cycle. The operation of the PDCA cycle is manifested at all levels of the entire management system, and each step is in the process of planning-implementation-checking, which embodies the inherent logic of the system operation. The plan is the process of clearing the goal and formulating the plan. It is the starting point and foundation of the whole cycle; implementation is the main body in the cycle and the key to the success or failure of the whole cycle; checking plays a role in controlling and monitoring the whole process. Processing is a link to summarization and improvement, and is an important stage for making the cycle self-

improvement. The characteristic of the Deming cycle method is that the large ring sets a small ring and constantly pushes management to a new level. Therefore, PDCA Dai Minglun is widely used in enterprise quality management and plays an important role in promoting the improvement of enterprise product quality.

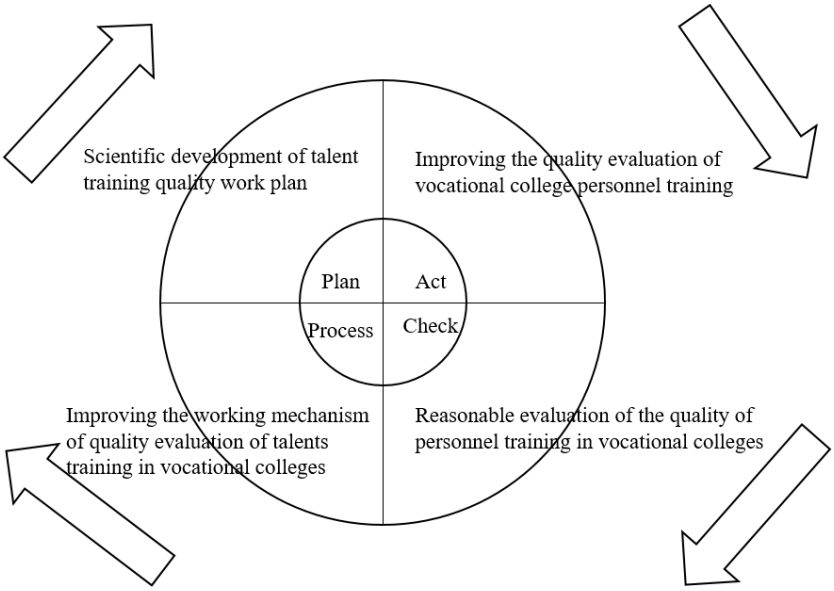

Figure 2.4 PDCA Cycle Diagram of Talent Training Evaluation in Higher Vocational Colleges

Source: Authors draw the proceeds.

The characteristics of talent training in modern vocational colleges require that there should be corresponding methods and requirements to evaluate the quality of personnel training in vocational colleges. In order to meet the new requirements of vocational colleges for the diagnosis and improvement of teaching work, Dai Ming's PDCA cycle control method is used to diagnose the quality of talents cultivated in vocational colleges and improve the quality evaluation results of personnel training. According to the four links of the Deming cycle, the quality evaluation of talent training will be promoted from four aspects. First, scientifically formulate a work plan for quality evaluation of personnel training. According to the first step of the Deming cycle, a clear evaluation of the work plan is a prerequisite for carrying out the evaluation work, and is an important guarantee for ensuring that the work is moving toward the same

goal, rationally allocating resources, and improving efficiency. 1) When formulating the objectives, based on the information on the state of the personnel training work and the data of the third-party evaluation data, the current data is used as the reference data for the work in the future period, and the priorities of the work objectives are clearly defined. The preconditions for the implementation of the plan should be analyzed in depth. 2) The work plan should be set in accordance with the characteristics of the school. 3) The work plan should be combined with the training objectives of the professional talents of each institution. 4) The planning system should be complete. 5) Strengthen the management of the plan. Second, improve the implementation of quality evaluation of vocational colleges. Deming's cycle theory believes that execution is the process of achieving the goal through implementation according to the previous plan. Strengthening implementation is the prerequisite for promoting the quality evaluation of personnel training. 1) Take the quality evaluation of talent training as a routine work. 2) Intensify system construction and innovate talents training evaluation ideas. 3) Ensure that the capacity and level of the evaluation staff are in place. Third, it is reasonable to check the quality evaluation of vocational colleges. Deming Cycle believes that inspection is one of the main ways of control. Carrying out inspections on the quality evaluation of personnel training is the key to ensuring the normal and effective development of evaluation work. 1) Conduct a check on the quality evaluation of personnel training. 2) Fully mobilize the forces of all parties to supervise the work. 3) Focus on monitoring the key factors of the evaluation. Fourth, improve the work mechanism for improving the quality of personnel training in vocational colleges. Processing (Act) is the last link of the Deming cycle and is the most important part of improving the quality and efficiency of work. Dealing with the talent quality evaluation work, to improve the pertinence and effectiveness of the quality evaluation of talent training, and then to provide scientific advice on the training of talents in schools, has an important guiding role in improving the quality of personnel training. 1) Establish a timely feedback mechanism for results. 2) Introduce work improvement or rectification accountability mechanism. 3) Establish a performance appraisal mechanism for rectification.

2.2.2 Modern Apprenticeship Teaching Mode

Intelligent production systems require highly complex technical skills, which not only requires knowledge of disciplines across specific industrial and software fields, but also technological innovation capabilities, as well as mastery of technical skills and complete complex production systems. principle. To this end, it is necessary to construct a consistent system of training from the secondary vocational school to the specialist higher vocational education, to the technical application-oriented undergraduate course, to the professional degree. The purpose is to integrate the advantages of vocational education in the training of talents in various academic disciplines and exert their overall effects. The cultivation of technical skills required for intelligent production systems must also require the deep involvement of enterprises. This requires further building a modern apprenticeship system based on the design of a consistent training system. At present, Germany is making full use of the modern apprenticeship method in cultivating technical and technical personnel. In addition, it is also an important method for international vocational education in terms of personnel training. The modern apprenticeship system is implemented to solve the following three problems: 1) solving the employment problems of social youth; 2) cultivating skilled technical and technical personnel; 3) realizing technology through the inheritance and long-term accumulation of technology between mentor and apprentice Innovation.

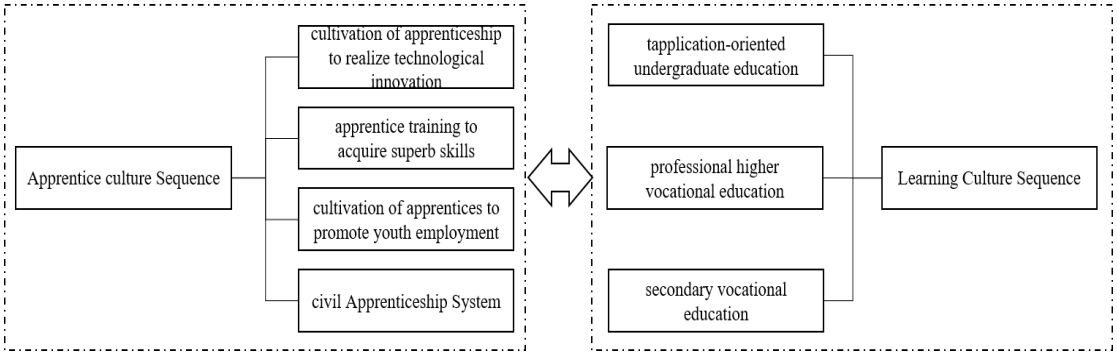

Figure 2.5 Pattern of Modern Apprenticeship in China

Source: Authors draw the proceeds.

The basic mode of modern apprenticeship in China: First, the modern apprenticeship consists of the deep cooperation of the apprentice training sequence and the school training sequence. The second is that the apprenticeship training sequence consists of four levels, namely, the above three types of apprenticeship training. There are also folk apprenticeships under the model. This apprenticeship system exists widely in micro-economy. The school training sequence consists of three levels, technical application-based undergraduate education, specialist higher vocational education, and secondary vocational education. Third, there are only two. The overlapping parts of the sequence can be called modern apprenticeships. The apprenticeships of other parts are not part of the national education system and cannot be called modern apprenticeships.

2.2.3 Corporate Management Model

Modern vocational colleges use the basic structure of company operations for education management called corporate management mode. The government, enterprises, and schools all invest corresponding resources to establish a shareholders' meeting. The shareholders' meeting is responsible for forming the board of directors of the three parties. The relevant personnel of the government, enterprises, and schools constitute the composition of the board of directors. The board of directors accepts the supervision of the supervisory committee composed of experts. The board of directors employs professional managers. The principal of the school, the executive board of directors resolutions, hire a professional manager to serve as the school principal, and implement the principal responsibility system. According to the teaching needs, the functional departments are built, and the teaching module is the basic teaching unit, breaking the boundaries of the profession. Enterprises and schools as teaching performers provide teaching modules according to the market and student needs.

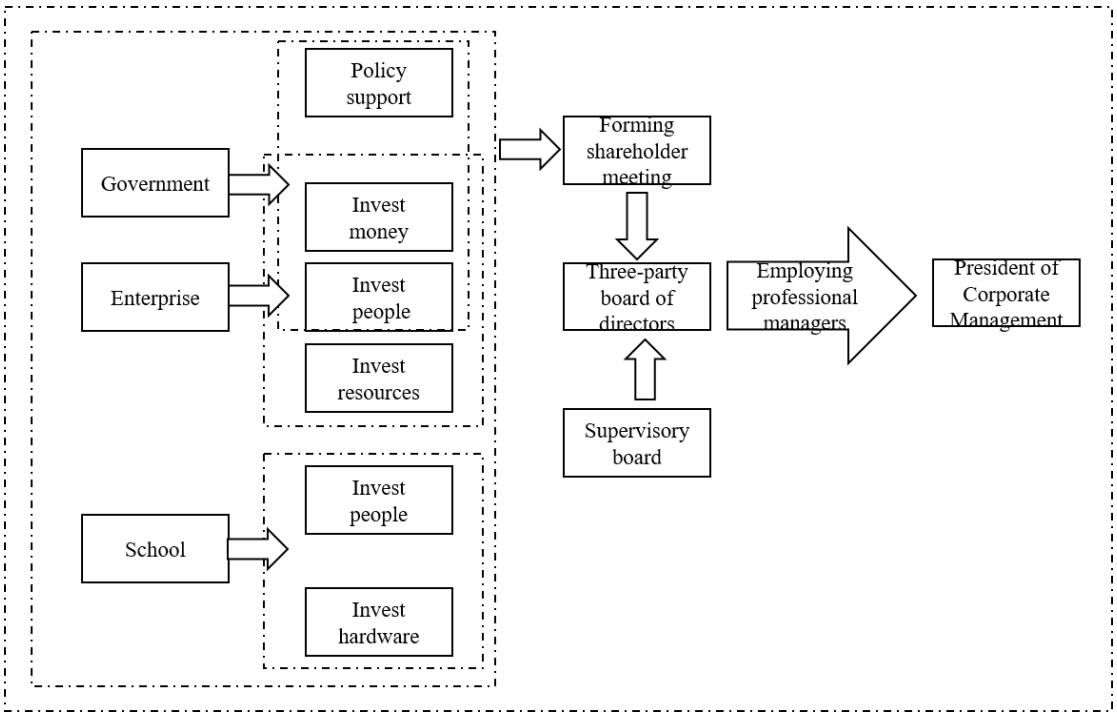

Figure 2.6 Corporate Management Model

Source: Authors draw the proceeds.

Corporate management has the following characteristics: First, it realizes the marketization of teaching products. Teaching products are no longer just unilaterally provided by the students. Students can only passively accept and realize the integration of teaching products and the market. Students can independently select the required teaching products and turn passive learning into active learning. Second, to maximize the mobilization of social resources to run education. Through the investment method, the company participates in the educational activities, investing in enterprises, providing training venues, participating in teaching work, and prioritizing talent selection. The participation of enterprises can mobilize social resources to the greatest extent, and stimulate the enthusiasm and initiative of enterprises to invest in vocational education. Finally, the practicality of higher vocational education has been realized. The corporate management school itself is a good professional training platform. Students can achieve the perfect connection between theoretical study and practice in the study, which can fully reflect the practical characteristics of higher vocational education and provide high skills for the society. Talents for the enterprise to train technical talents

that meet the requirements of the post.

Zhang Zhongbing (2014) believes that to achieve the corporate management of higher vocational education, it is necessary to first reform the management model of higher vocational education and break the management style of the administrative system of traditional institutions. The government needs strong administrative means to support the reform of the vocational education system. In terms of financial support for vocational education, the government is no longer the only investor in vocational colleges. The enterprise will be added as an important supplement to the construction and investment of higher vocational colleges. The government and enterprises jointly invest in modern vocational education, which has alleviated the enterprise. The training burden has also alleviated the lack of government education investment.

2.3 Building a Modern Vocational Education Management Framework

This paper summarizes the above theories of vocational education related research, including “three spiral theory”, “professional education synergy theory” and “vocational education and social inclusion to promote economic growth theory”, and modern vocational education management mode “PDCA cycle”, “the content of the modern apprenticeship” and “the corporate management” model proposes the theoretical framework of the current management of modern vocational education. See Figure 2.7 for details.

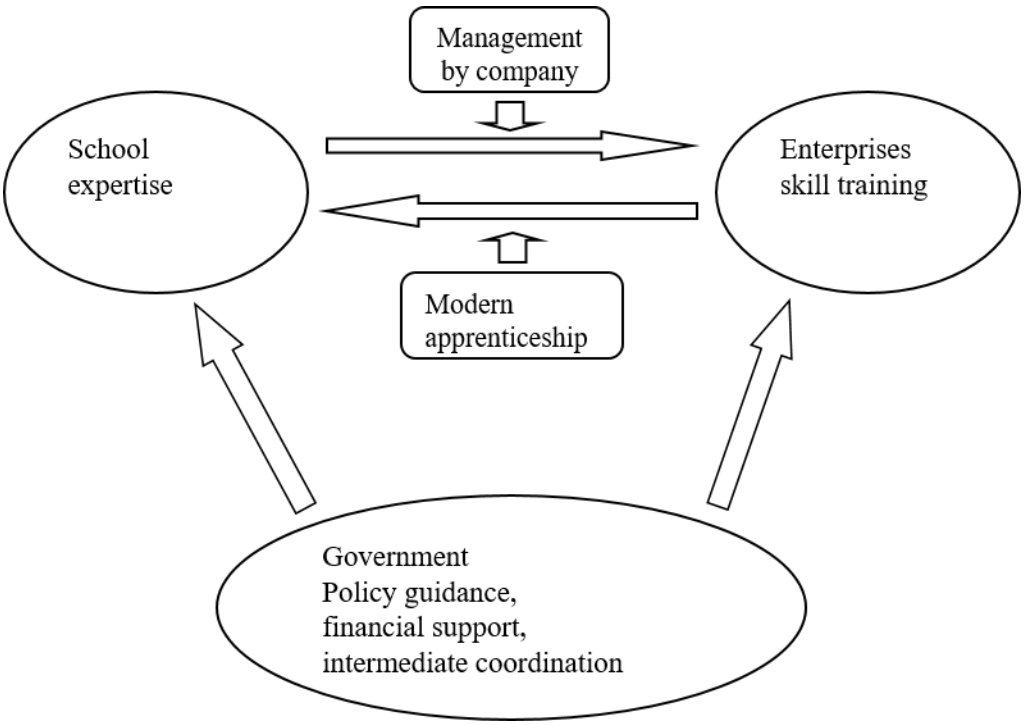

Figure 2.7 Modern Vocational Education Management Framework
Source: Authors draw the proceeds.

In the modern vocational education management framework constructed in this paper, the school, as the main body of vocational education, is mainly responsible for the teaching of students' professional knowledge, and is responsible for the daily management of students and the assessment of students' learning quality. Vocational colleges should strengthen cooperation with enterprises, and understand the talent needs, professional needs and skill needs of enterprises through the corporate management model. According to the production needs of the enterprise, the vocational colleges are responsible for the curriculum setting and cultivating the students' professional skills to meet the skills requirements of the employees in the production process. In addition, in addition to teaching students the necessary professional knowledge, the school strengthens cooperation with enterprises through the modern apprenticeship system, and employs technical workers of the company to be responsible for the skills training of students one-on-one. The government mainly provides policy guidance and financial support for the development of vocational colleges, and coordinates the cooperation between vocational colleges and enterprises.

2.4 Literature Review

2.4.1 Progress in Foreign Research

The foreign research literature mainly summarizes the role of school teachers in the process of vocational education management and the role of enterprises in vocational college education. In addition, a review of vocational education affects employees' skills, competitiveness, and impact on economic development and social inclusion.

First, the role of vocational college teachers. Graham Attwell (1997) analyzed the new role of European vocational education teachers and trainers. Based on the new vocational education management model, it surveyed the development and changes of European vocational education and training over the past two decades. relationship. After the Second World War, vocational education and training were downgraded to secondary roles (Garavan, 1995), and the contribution of vocational education to economic growth declined. In the 1950s, mainstream theory argued that economic growth is directly proportional to the size of capital stock, while labor is seen as an indiscriminate number. Anne de Bligniere (1997) tracks the different roles of French vocational education and training professionals in implementing corporate legal obligation training programs that cover different concepts of vocational education and training. Papadopoulos (1994) requires teachers to be pioneers of change and progress in the teaching and learning process, and believes that the training of teachers and trainers is crucial. Engenburg (1994) pointed out that there are many examples of productive learning in daily life. "There is no teaching or conscious self-direction, and there are relatively few in-depth investigations. For this reason, vocational colleges, in addition to training students' work skills, There is also the teaching of the necessary expertise, and its mission is to improve the quality of learning and make it purposeful. Schön (1983) argues that traditional vocational education institutions focus on the principles of knowledge and practice in teaching specific occupations. Spain, Celerrio and Miguel (1996) identified the emergence of new professional training functions and new features of traditional HRD participants. In France, the initial investigation revealed the development of contradictions (De Bligniere, 1997). For a long time, the trainer's career was based on their ability to master teaching and psychological issues

to master the direction of teaching and psychological problems. The performance of apprentices after vocational training is often considered to be the effectiveness of training, which means that vocational education affects students' professional knowledge and abilities. Vocational education and training in adult education is effective. In this sense, it promotes the development of professional knowledge and abilities. Viola and Deutscher et al. (2018) simulates the sensitivity of teaching through differential function, and finds that in vocational education. Apprentices significantly improved their performance in the assessment of professional knowledge and abilities.

Second, corporate training improves the skills of vocational college students. Schools and training institutions are often considered to undertake the task of teaching (Naumann, Hochweber, & Hartig, 2014), especially in vocational education, where skills need to be regularly displayed in the workplace, as a target for career assessment, and skill training. The concept of pure knowledge is more important. The definition of skills, Mulder, Weigel, and Collins (2006), through research, agree that skills are the ability to operate through the use of knowledge, skills, and thinking that are integrated into individual professional skills. Existing theoretical and qualitative research provides support for the acquisition of specific knowledge and abilities for professional learning (Benner, 2004), which reinforces the dual proficiency learning as a powerful skill acquisition system proposition (Bonnal, Mendes, & Sofer, 2002; Griffin, 2016) is located between the boundaries between learning and work (Harteis, Rausch, & Seifried, 2014). In order to examine the prospects for further development of vocational education in Russia, Dmitry, Rudenko et al. (2015) introduced the demand survey design for further vocational education of 1028 people aged 25-64 in the Tyumen region of Russia. The design of the study is descriptive. The purpose of the study is to Assess the actual situation and determine the future shape of the future vocational education market. This study identified some promising career training programs in the region. Educational institutions should take into account the characteristics of further vocational education services needs when developing curricula and determining the conditions for achieving them.

Third, the role of vocational education in economic growth. From the perspective of human capital theory, vocational education is considered to be an important source of economic growth (Panitsidou et al., 2012), and vocational

education in vocational colleges is used as a tool to alleviate economic inequality, unemployment and poverty (Rudenko, 2014). Mouzakitis (2010) needs to narrow the gap between academic and vocational education and strengthen cooperation between the education sector and employment organizations and industries. Education and training reform must be based on market demand assessments and determined through appropriate market research. The Regine Grytnes (2018) study explored the differences in vocational education and training systems between Sweden and Denmark, which may be important for students' safe learning and practice during vocational education and training. In both countries, students participate in full-time education, which includes school-based professional training and company-based professional skills training. However, in company-based training, Swedish students retain their student status, while Danish students are employed as apprentices. Ricky Yuk Kwan Ng et al. (2018) discussed the possibility of using mobile and flexible technologies to improve vocational education and training in workplace learning. It also proposes a series of innovative teaching practices to promote better learning and teaching experience in vocational education. The instructor can also train students in the workplace. While mobile and flexible technologies emphasize online learning and virtual learning experiences, vocational education and training emphasizes hands-on skills and practices in real-life workplaces.

Fourth, the impact of vocational education on social inclusion. Kaye, Bowman (2004) introduced the vocational education and training strategy developed by Australian training institutions in 1998-2003, and reviewed the achievements of the equity group identified in the national strategy, as well as the problems faced. It also considered whether there were Other groups are at a disadvantage, and vocational education and training can play a role in improving their opportunities. It discusses the methods and frameworks that need to be developed to further improve the fairness of vocational education and training. Understanding the lack of skills is the most common cause of economic development challenges, especially unemployment and poverty. Therefore, improving skills through training is an important source of human resource development to achieve full economic benefits (Tripathi et al., 2010). Vocational education and training are considered a good medicine to solve the problem of youth unemployment, because most people cannot pay for higher education, and education

alone cannot alleviate the threat of poverty and economic welfare. The importance of vocational education and training is increased by the impact of technological dynamics on the skills required by the workforce (Salvatore, & Campano, 2012). Vocational education and training have been consistently considered by researchers, academics, practitioners and policy makers. The prestigious US Perkins Act describes vocational education training as a planned education program that provides a series of directly related modules that are directly related to existing or emerging careers that require a bachelor's or advanced degree.

Fifth, the cultivation of competitive ability in vocational education. The UK attaches great importance to the competitiveness of vocational education and training. Phil, Hodkinson (2006) believes that there are two modes of competitiveness in the UK, one is "action" and the other is "interaction". The education model is more competitive than the vocational education qualification certificate cultivated by the "action school". Vocational education and training are important tools for improving worker efficiency, scalability and productivity, and enhancing the competitiveness of enterprises. They also help to correct imbalances in the labor market (Caillods, 1994). Vocational education and training programs must include competency-based training (CBT) programs that enhance learners' theoretical and practical knowledge to contribute to society in terms of productivity and service delivery (McQuay, 2002). The purpose of vocational education and training is not only to expand the student's identity, but also to the career, but also to develop the skills needed for an effective or guaranteed career (Renold, 2009). Vocational education and training are considered to be better than general education because it is believed that vocational education and training promote social inclusion (Baethge et al., 2009) and economic growth, by improving people's skills and facilitating their access to the labour market and gaining Income (Nilsson, 2010). Vocational education and training are designated for various names, such as technical education, vocational training, vocational education, and vocational and technical education is an aspect of preparing students for industrial, agricultural, commercial, and family economic education, usually in high school or lower. Provided at the higher education stage. The definition of vocational education, a comprehensive term referring to all aspects of the educational process, in addition to general education, research on technology and related sciences, and practical skills related to occupations

in all areas of economic and social life, Attitude, understanding and knowledge acquisition (Maclean, & Wilson, 2009). Vocational education and training has become a common way to alleviate employment inequality, promote poverty reduction and sustainable economic growth (Comyn, & Barnaart, 2010; Nilsson, 2010) because it offers a variety of advantages. First, vocational education and training can improve employability by developing individual technical skills to find jobs or establish private businesses (Maclean, & Pavlova, 2011). Improving social and personal productivity is the economic purpose of training and education. Second, vocational education and training also provides opportunities for retraining (Huber et al., 2018) to ensure job opportunities without the need for work (Finch, & Crunkilton, 1999). Third, vocational education and training are important sources of livelihood (Finch, & Crunkilton, 1999). Fourth, vocational education and training can also help achieve different national, social and economic goals, such as income equity, wage growth, regional development, attracting foreign businesses and increasing exports. Vocational education and training have become an important factor in the socialization of the younger generation contributing to society and the market (Gaskov, 2000).

The existing literature on the effects of vocational education and training has certain limitations. First, some of the results it provides are either related to social inclusion (Hilal, 2012) or related to economic growth. This document also raises contradictory findings about the impact of vocational education and training on social inclusion. For example, Allais (2012) reported that South Africa's various skills development programs were considered to have failed. Second, its current focus is more on policy debates in single or multiple but limited economic regions in developing economies. Third, the existing literature focuses more on the relatively different effects of vocational education and training, such as the comparison of general skills and the comparison of specific skills because of the greater transferability of general skills (Tanaka, 2018). The green restructuring of vocational education and training in vocational education and training and the role of labour market outcomes (Pavlova, 2014). While focusing on all aspects of vocational education and training, due to the different nature of vocational education and training systems, such literature presents conflicting results for the effectiveness of vocational education and training. For example, Eichhorst et al. (2012) claim that dual systems tend to be more efficient, while

Tanaka (2018) has higher transferability than specific skills due to higher demand for general skills and therefore, based on general skills. This is emphasized in the vocational education and training system. Since vocational education and training have brought huge investment and time, ordinary vocational education and training programs have been extended for two to four years, determining the social and economic value of vocational education and training (Nilsson, 2010). The purpose of this study is to fill this gap by identifying mechanisms for investment in vocational education and training to promote a country's economic growth. We will investigate the mediating role of social inclusion by collecting 15 years of data from 31 OECD countries.

Table 2.1 Summary of Main Foreign Literature Views

Research Paper	Key Views
Phil, Hodkinson（2006）	The study found that the interaction vocational education model is more competitive with the action than the vocational education qualification certificate.
Kaye, Bowman（2004）	Further improve the fairness of vocational education and training, and play the role of vocational education and training.
Graham, Attwell（1997）	Based on the new educational framework, the relationship between European vocational education training and economic development was analyzed. It was found that after World War II, the contribution of vocational education and training to economic growth declined.
Papadopoulos (1994)	Teachers are required to be pioneers of change and progress in the teaching and learning process, and believe that the training of teachers and trainers is crucial.
Engenburg (1994)	It is believed that in addition to training students' work skills, vocational colleges also carry out the

Table 2.1 (Continued)

Research Paper	Key Views
	necessary professional knowledge teaching. Its task is to improve the quality of learning and make it purposeful.
Beautiful (1983)	It is believed that traditional vocational education institutions focus on the principles of knowledge and practice in teaching specific occupations.
Viola, German (2018)	Through the differential function to simulate teaching sensitivity, the study found that in vocational education, apprentices significantly improved their performance in the assessment of professional knowledge and abilities.
Mulder, Weigel, and Collins (2006)	Consistently believe that the ability to operate through the use of knowledge, skills and thinking is integrated into individual professional skills.
Dmitry Rudenko (2015)	It is believed that educational institutions should take into account the characteristics of further vocational education services needs when developing courses and determining the conditions for achieving them.
Panitsidou et al., (2012)	From the perspective of human capital theory, it is considered that vocational education is an important source of economic growth.
Rudenko (2014)	It is believed that vocational education in vocational colleges is used as a tool to alleviate economic inequality, unemployment and poverty.
Regine Grytnes (2018)	It is considered that vocational college students are equally important in the safe learning and practice of vocational education and skills training.

Table 2.1 (Continued)

Research Paper	Key Views
Ricky Yuk Kwan Ng (2018)	A series of innovative teaching practices have been proposed to promote better learning and teaching experience in vocational education, and instructors can also train students in the workplace.
Baethge et al., (2009)	Considering that vocational education and training promote social inclusion and economic growth by increasing people's skills and making them more accessible to the labour market and earning income
Muhammad Ali Asadullah (2018)	Through the role of social inclusion, the role of state investment in vocational education and training on economic growth is explored. The results show that social inclusion enhances the contribution of vocational education and training to economic growth. This study provides policy implications for policy makers in developing countries.
Nilsson (2010)	Recognizing that vocational education and training has become a common way to alleviate employment inequality, promote poverty reduction and sustainable economic growth.

Source: Authors collated.

2.4.2 Progress in Domestic Research

The domestic literature on modern vocational education mainly focuses on the following aspects: innovative vocational education management system; modern vocational education management mode; school-enterprise integration, integration of production and education; In particular.

Firstly, in the aspect of innovative vocational education management system, Meng, Zhaoshang (2007) combined with the current situation of China's higher

vocational education management system, that in the reform and innovation of higher vocational education management system, higher vocational colleges are the main body, and all sectors of society are intermediaries. The market is the regulator and the government sector is the promoter. Hu, Lihe (2008) believes that the ways to improve the management mechanism of higher vocational colleges include establishing and perfecting scientific and effective incentive mechanisms, establishing and perfecting the competition mechanism of reward and punishment, survival and the fittest, and establishing and perfecting the evaluation mechanism of openness, fairness and merit. Wei, Zuoguo (2009) believes that the choice of management system innovation in higher vocational colleges in the new era includes establishing a higher vocational education management system that is compatible with China's social and economic development, and further improving the legal system suitable for the development of higher vocational education in China. Establishing industries, enterprises, and schools. The mechanism of joint participation, establish and improve the supervision and evaluation system for the development of higher vocational education, establish a comprehensive employment access system and vocational qualification certification system, and reform the admission management system for higher vocational colleges. Li, Wei (2016) believes that the innovative approach of modern vocational management system in higher vocational colleges strengthens the cooperation of industry, schools and enterprises, reforms the allocation of rights, improves the operational ability of management, improves the incentive mechanism, and improves the efficiency of human resource management. Cai, Zhongxing et al. (2018) analyzed the bottlenecks faced in the process of constructing a modern vocational education system with Chinese characteristics, such as inflexible management system, insufficient integration of production and education, and poor connection between middle and high vocational schools. It is urgent to construct a scientific and rational institutional mechanism. Form the endogenous motivation for the development of modern vocational education. Guo, Tianping (2018) based on the new requirements of the 19th National Congress on vocational education, analyzed the current situation of the integrated management system of vocational education in China, and studied the provincial-level integrated management system of vocational education in the new era. Yu, Hui et al. (2016) analyzed the management institutions and decision-making models of vocational

education in the UK, and believed that decision-making in vocational education should take into account the interests of multiple interests and improve scientific and universal acceptance.

Secondly, in the aspect of modern vocational education management mode, Chen, Li (2017) analyzes the application of OBE teaching mode in the perspective of modern vocational education. The purpose is to realize the teaching mode from the cultivation of talents from the traditional teaching resources as the center to The shift from learning output to the center. Shan, Jinhui et al. (2017) deeply analyzed the problems that emerged in the process of the group-based vocational education group model in the process of promoting the vocational education group education in recent years. Li, Qingsheng et al. (2016) analyzed the status quo of the construction of the teaching staff in vocational education schools in China based on the teacher construction and management under the German “dual system” education model, and proposed corresponding policies. Zuo, Ningli (2017) studied the characteristics of the current credit system management model of higher vocational education and the necessity and constraints of implementing the credit system management. Han, Fengqin et al. (2016) believe that the cultivation of German “artisan spirit” is inseparable from its advanced vocational education management model. The enlightenment to the development of vocational education in China is as follows. It is necessary to create a good social and cultural environment and comprehensively understand the comprehensive cost of undertaking vocational education. Management is the institutional guarantee for the implementation of vocational education and enterprise cooperation, and fund management provides financial security for vocational education. Liu, Zhixuan (2015) believes that the multi-factor-led, differentiated management curriculum management model of higher vocational education is an innovation of the curriculum management model in the process of establishing a modern vocational education system. Zhao, Haichun et al. (2014) provided a reference for the development of vocational education in China by analyzing the vocational education models of the United States, Germany and Japan, including the American vocational education model of “taking students as the foundation and realizing lifelong education”, “University theoretical knowledge and corporate occupation”. The dual-track parallel training system of “skills learning” and the “integration of learning and industry, different

educational resources and environment for enterprises to cultivate application-oriented talents suitable for production, construction, management and service" Wait. Hu, Zelin (2018) believes that the current shortcomings of the vocational education management model lead to shortage of educational resources, uneven student culture and weak employment competitiveness of graduates. Zhu, Ping (2016) believes that vocational education management innovation should focus on improving the connotation construction and comprehensive open innovation measures, giving play to the role of vocational college reform and innovation, and attracting social forces to support private vocational education. Yan, Li (2017) believes that the transition of vocational education from management mode to governance mode is the key to improving the vitality of provincial vocational education development. In the future provincial vocational education governance, it should be implemented through the implementation of cross-border attributes of vocational education and reasonable allocation. The main body's responsibilities and rights, strengthening institutional capacity and coordination mechanism, and strengthening the role of market allocation resources. Liu, Hongying et al. (2015) draw on the experience of some developed countries in foreign countries. The education management model includes Germany's "dual system", France's "cross-learning", and Japan's "multi-level openness", from management systems and concepts, enrollment and Teaching management and other aspects put forward some suggestions on how to promote the innovation of the management mode of higher vocational education in China. In view of the management mode of higher vocational education, some scholars also discussed the first-level management mode that is currently widely used. Xu, Piyue et al. (2014) discussed the first-level management model commonly used in higher vocational education, and found that school leaders and various functional departments are the main subjects of management. Departments are the object of management, and the performance of various functional departments on departmental management. For the simple control, there is no service-oriented management, and many work is carried out passively and passively. Yi, Yi (2014) believes that the development of vocational education has entered a new stage, and there are three opportunities that may be ushered in: First, the extensive and deep participation of enterprises in the process of vocational education will become a common phenomenon in society; Education may become an important starting point

for promoting the optimization of educational structure. Third, the quality assurance system of vocational education should become an important task for the professional education front and industry enterprises to accelerate together. Although many scholars have carried out a lot of theoretical and empirical research on the supply and management mode of higher vocational education, it is still in the exploration stage for which management mode is adopted. Although the current mode of work is commonly used, it is in the process of exploration and experimentation. The true management model is more in line with the higher vocational education that needs reform, and there is no comprehensive feasibility analysis.

The third aspect emphasizes the integration of production and education and the integration of production and education. School-enterprise cooperation plays a vital role in improving the quality of professional personnel training and meeting the actual needs of enterprises. Zhao, Caixia et al. (2018) took the accounting information management profession of higher vocational colleges as an example, and explored the whole process of cultivating professional talents for professional integration of production and education and school-enterprise cooperation. Yu, Lei (2014) analyzed the problems in the talent management of enterprises under the vocational school-enterprise cooperation mode, and proposed strategies in terms of concepts and systems.

The fourth aspect is the construction of a teaching team for vocational education. Zhao, Wei (2015) believes that the dual-teachers are the highest requirements for teachers of secondary vocational education at the present stage in China. Through the analysis of the problems in the construction and management of the dual-teachers in secondary vocational education, it is discussed how to better in the project management mode. Goodly build a team of double-teachers in secondary vocational education. Shi, Ying (2017) summarized the problems in the process of cultivating applied management talents in vocational colleges, and then proceeded from the construction principle of “heavy literacy, heavy ability, strong practice and compound type”, and proposed to build the application technology of vocational education in China. Countermeasures for the management talent training model. Li, Na (2015) believes that the management of middle school students in modern vocational education faces a series of challenges. Focusing on the innovation of student management model under the modern vocational education system, it expounds the basic principles of

management model innovation, management method innovation, performance appraisal system, and counseling. Management of innovation and other aspects. Based on the reality of vocational education in China, Zhang, Youliang (2016) explored the innovation of student management model under the vocational education system in China. Pan Junxin (2015) explored the teaching mode and management of the credit system of vocational education.

Table 2.2 Domestic Related Literature Review Classification

Analytical Perspective	Literature Research
Innovative vocational education management system	Meng Zhaoshang, 2007; Hu Lihe, 2008; Wei Zuoguo, 2009; Li Wei, 2016; Cai Zhongxing, etc., 2018; Guo Tianping, 2018; Yu Hui et al., 2016;
Modern vocational education management mode	Chen Li, 2017; Shan Jinhui, 2017; Li Qingsheng et al., 2016; Zuo Ningli, 2017; Han Fengqin et al., 2016; Liu Zhixuan, 2015; Zhao Haichun et al., 2014; Hu Zelin, 2018; Zhu Ping, 2016; 2017; Liu Hongying et al., 2015; Xu Piyue et al., 2014; Yi Yi, 2014;
Production and education integration	Zhao Caixia et al., 2018; Yu Lei, 2014;
Vocational education teacher team	Zhao Wei, 2015; Shi Ying, 2017; Li Na, 2015; Zhang Youliang, 2016; Pan Junxin, 2015;

Source: Authors collated.

CHAPTER 3

RESEARCH METHODS

3.1 Research Thinking Framework

According to the second chapter of the modern vocational education management theory (three spiral management theory, vocational education collaborative management theory), modern vocational education management model (PDCA cycle, modern apprenticeship, corporate management mode) and domestic and foreign research summary, this article Get the research framework of the research:

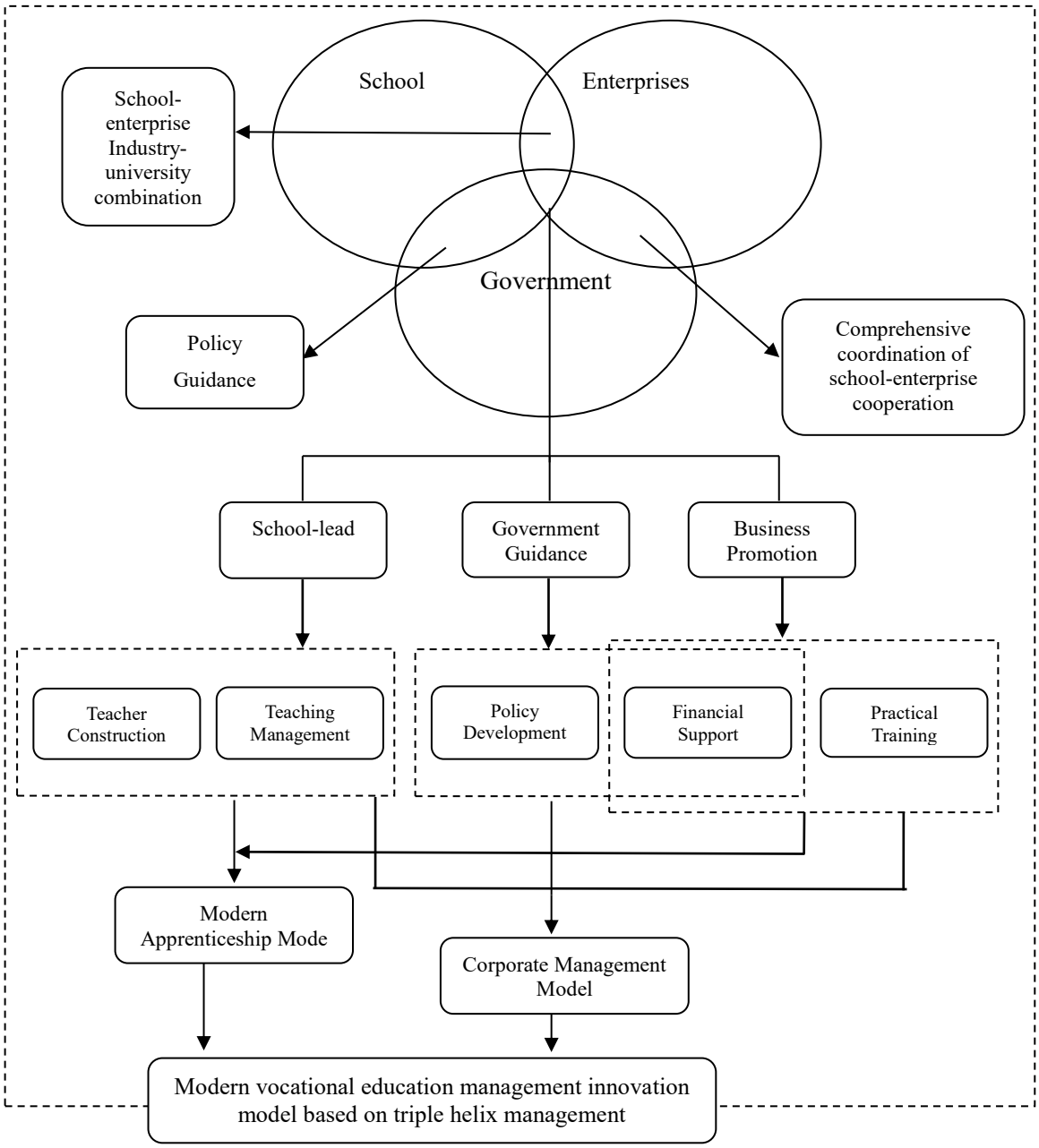

Figure 3.1 This Paper Studies the Framework of Ideas

Source: Authors draw the proceeds.

3.2 Qualitative Research Methodology

3.2.1 Research Objects

Responsible persons related to 4 vocational colleges in Beijing, Beijing Electronic Technology Vocational College, Beijing Finance and Trade Vocational College, Beijing Industrial Vocational Technical College, Beijing Agricultural Vocational College, government departments such as the Education Department and Beijing Municipal Committee, and close cooperation with vocational colleges The person in charge of the company carried out investigation and interview records, interviewed them about the management mode of modern vocational education in China, including the development history, development status and problems of Chinese vocational education, and also included the development of relevant modern vocational education management mode.

3.2.2 Interviewee

Relevant leaders of Beijing Electronic Technology Vocational College, Beijing Finance and Trade Vocational College, Beijing Industrial Vocational Technical College, and Beijing Agricultural Vocational College, understand the development history, current situation, and vocational education management mode and problems faced by the four vocational colleges. And challenges; government officials in the education sector, understand the government's policy guidance and financial support for vocational education development; relevant business leaders who are closely connected with vocational colleges, in school-enterprise cooperation, industry-teaching integration, and industry-university-research process, the role of enterprises Character.

3.2.3 In-depth Interview

In this study, 2 heads of each vocational college were selected, so there were 8 heads of 4 vocational colleges in total, 2 heads of close cooperation with each vocational college, 8 heads of enterprises related to 4 vocational colleges and 8 government officials.

Therefore, a total of 24 people were selected to conduct interviews on relevant contents of China's modern professional education management model, so as to obtain insights, thoughts and Suggestions on China's professional education management model.

The development of professional education in China, the management mode of professional education, and the functions of the government and enterprises in the management of professional education.

In addition, it is necessary to understand the problems and challenges in the current management model of education in China's modern profession, as well as the development opportunitie

3.2.4 Collecting Data

Use the in-depth interview method to collect factual materials by conducting a purposeful verbal conversation with the interviewee. Mainly adopt direct access and individual access methods, that is, directly to vocational colleges, government agencies or enterprises to conduct contact, and then focus on individual visits to the actual operators of individual departments, mainly adopting structural interviews, according to fixed issues, different The visitors asked questions and answered questions, but the way they asked and the way they answered were not uniform.

3.2.5 Analysis Data

Read through all the interview records on the modern vocational education management model without prior judgment, maintain impartiality, and then use some concise words or phrases to determine the category of some key points of view and data, followed by coding classification Finding the similarities and differences between these interviewers' views on the modern vocational education management model, and finally re-reading the materials and thinking about the coding process of data and materials related to the modern vocational and vocational education management model, considering whether their thinking mode is Too linear thinking, and then draw the relevant qualitative model with reference to the actual situation of the theoretical and vocational colleges

CHAPTER 4

QUALITATIVE ANALYSIS OF CHINA'S MODER VOCATIONAL EDUCATION MODEL

4.1 Development of China's Vocational Education

Compared with the development of foreign higher vocational education, China's vocational education started late. The prototype of vocational colleges in China was formed in the 1970s, which marked the beginning of the establishment of higher vocational education institutions in China in the 1980s. With the acceleration of the pace of reform and opening up, the former State Education Commission approved 13 local vocational colleges including Nanjing Jinling Vocational College in 1980 to set up vocational colleges to meet the demand for technical and skilled talents in economically developed regions. In order to convey and implement the spirit of the Fifth Session of the Fifth Session of the National People's Congress, in 1983, the State Education Commission approved the establishment of about 23 vocational universities, followed by the establishment of several vocational universities in the following two years. The rapid rise of vocational colleges has a profound impact on the reform of higher education and the development of vocational education. In 1985, the state clearly proposed to increase investment and actively develop higher vocational and technical colleges. After the "Decision" was promulgated, 126 vocational universities were established nationwide.

From 1991 to 1998, China began to explore and practice the development of various types of higher vocational colleges. At this stage, the state has made beneficial explorations and bold practices in higher vocational education through the formulation of relevant policies, which has a great impact on the development of vocational education. The details are shown in Table 4.1.

Table 4.1 National Development Vocational Education Policy 1991-1998

Time	Vocational Education Reform Policy
1991.10.	The Decision of the State Council on Vigorously Developing Vocational and Technical Education (Guo Fa [991] No. 55) emphasized the active promotion of the reform of the existing vocational universities and the establishment of a group of highly skilled higher vocational schools to provide direction for the development of vocational education. .
1994.6	The National Education Work Conference clearly stated that it actively develops vocational education and adult education at all levels, reforms the educational model of higher vocational schools, determines the basic policy of "three reforms and one supplement", and accelerates the model innovation of higher vocational education.
1996	The third national vocational education work conference put forward the three reforms and one supplement higher vocational education development policy. Through vocational colleges, adult colleges and colleges, reform and development of higher vocational education, it is clearly proposed to adopt corresponding development countermeasures to promote higher vocational education. development of.
1998	The Ministry of Education has put forward the development policy of three more and one reform and attaches great importance to the development of higher vocational education. The so-called three more and one change policy is to develop high-level jobs with multiple channels, multiple specifications and multiple modes. The focus is on teaching reform and truly develop high-level characteristics.

Source: Authors collated.

From 1999 to 2005, China's higher vocational education entered a period of vigorous development, and the enrollment scale of vocational colleges continued to expand. Since 1991, the Ministry of Education has implemented a new management model and operational mechanism for higher vocational education schools. At the same time, it has included secondary colleges formed by ordinary undergraduate courses in higher vocational colleges, which has improved the social recognition of higher vocational education.

Table 4.2 Reform of Vocational Education From 1999-2005

Time	Vocational Education Reform Content
1999.1	The Ministry of Education and other ministries and commissions pointed out that it is necessary to implement a hierarchical management, local-based, government-integrated, social-participating management system and change operational mechanisms.
2001.7	Encourage and support social forces to run schools and develop higher vocational and technical education. Higher vocational education has gradually moved from the marginalization of higher education to the center and has become an important part of higher education in China.
2003-2007	The Higher Vocational and Technical College is guided by employment and takes service as its purpose. It strengthens cooperation with industry, enterprises, scientific research and technology promotion units, and combines the path of production, study and research to cultivate high-quality skilled personnel, especially high-skilled personnel.
2005.10	The State Council issued a decision to vigorously develop vocational education and proposed a pilot program to vigorously implement the work-study model.

Source: Authors collated.

From 2006 to 2009, the development of vocational education entered a new stage of development. The Ministry of Education issued a series of opinions on accelerating the reform and development of higher vocational education. Various demonstration higher vocational colleges gradually emerged and launched the construction of hundreds of exemplary higher vocational colleges with “high vocational 211”. In 2010, the Party Central Committee and the State Council promulgated the Outline of the National Medium- and Long-Term Education Reform and Development Plan (2010-2020), marking a new era in which China’s education has entered an overall quality improvement. The quality of education is the result of social evaluation. Education that can effectively meet the needs of society is a high-quality education. Therefore, improving the quality of education itself means developing diversified education. Modern vocational education management mode pays more and more attention to the cultivation of professional talent quality. Therefore, the development of modern vocational education urgently needs to establish an evaluation system for the quality of talent training. Beginning in 2010, the Educational Planning Outline is to propose laws and regulations to promote school-enterprise cooperation and promote the institutionalization of school-enterprise cooperation. In 2014, the “Decision on Accelerating the Development of Modern Vocational Education” issued by the State Council pointed out that research and development of laws and regulations and incentive policies to promote school-enterprise cooperation in running schools. In 2016, the Central Deep Reform Group requested that policy documents on school-enterprise cooperation promotion be issued as soon as possible. In 2018, the Ministry of Education and other six departments jointly issued the Professional Schools and Enterprises Cooperation Promotion Measures. School-enterprise cooperation and integration of production and education are a basic mode of running vocational education, and it is the internal training of high-quality workers and technical skills. Requirements are also the key to running a good vocational education. The 19th National Congress of the Communist Party of China clearly put forward the requirement of deepening the integration of production and education, school-enterprise cooperation. To this end, we have issued this Measures in conjunction with relevant departments on the basis of long-term work. The Measures establishes the basic institutional framework for school-enterprise cooperation by clarifying the target principles, implementation subjects,

forms of cooperation, promotion measures, supervision and inspection of vocational school-enterprise cooperation, and implementing the socialist ideology and party with Chinese characteristics in the near modern era. The spirit of the 19th National Congress, responding to the voices of the vocational and educational fronts and the society for many years, deepening the integration of production and education, school-enterprise cooperation, and struggling to run a new era of vocational education is of great significance. Earlier, at the end of 2017, the State Council issued the Several Opinions on Deepening the Integration of Production and Education. The document includes 30 policies in 7 aspects. This is a concrete measure for the National Development and Reform Commission and the Ministry of Education to deepen the integration of production and education. The Opinions focus more on the integration of production and education. The Measures focus more on school-enterprise cooperation. The two documents have jointly formed a policy of combination boxing to promote vocational education to improve quality, deepen integration of production and education, and school-enterprise cooperation.

Table 4.3 Reform of Vocational Education in 2006-2018

Time	Vocational Education Reform Content
2006-2009	The construction of 100 exemplary higher vocational colleges of "Higher Vocational 211" was launched.
2010	Encourage and support social forces to run schools and develop higher vocational and technical education. Higher vocational education has already adopted the Educational Planning Outline, which is to propose laws and regulations to promote school-enterprise cooperation and promote the institutionalization of school-enterprise cooperation.
2016	The Central Deep Reform Group is required to issue policy documents on the promotion of school-enterprise cooperation as soon as possible.
2017	The State Council issued the Several Opinions on Deepening the Integration of Production and Education. The document includes 30

Table 4.3 (Continued)

Time	Vocational Education Reform Content
	policies in 7 aspects. This is a concrete measure for the National Development and Reform Commission and the Ministry of Education to deepen the integration of production and education.
2018	The Ministry of Education and other six departments jointly issued the Procedures for Promoting School-Enterprise Cooperation in Vocational Schools.

Source: Authors collated.

4.2 Current Situation and Problems in the Development of China's Vocational Education

4.2.1 Status Quo of China's Vocational Education Development

4.2.1.1 Policy Objectives for the Development of Vocational Education in the Country

With the development of the economy and the upgrading of industrial institutions, the technical content of the production process has increased, corresponding to the need for more highly skilled personnel. Under this background, the state promulgated the policy guidelines for promoting the development of vocational education, clarified the goal of vocational education to train students, and determined the policy of actively guiding the development of vocational education based on government macro policy guidance, market demand-driven, employment requirements. Constantly optimize the policy environment for the development of domestic vocational education, continuously reform the management mode of vocational education, improve the quality of professional vocational education to cultivate professional talents, and promote the modern service education to better serve the society.

4.2.1.2 Diversification of Modern Vocational Education Management Model

The government has clearly pointed out that it is necessary to carry out various forms and modes to comprehensively develop the management mode of modern vocational education, and carry out diversified reforms in teaching mode and management mode. In the school-running system, the school that attracts social forces to participate in vocational education breaks the pattern of government-run schools and implements a diversified school-running pattern. In the faculty, actively training double-teacher professional teachers, in addition to teaching professional knowledge, it is necessary to carry out necessary practical training for professional teachers, so that teachers can acquire the necessary technical skills and build a comprehensive and comprehensive high-quality teaching team. In the type of schooling, accelerate the construction of talented projects. The integration of production and education is an important guideline for promoting the development of vocational education, strengthening the cultivation of innovative talents and technical skills, and is an important institutional arrangement for the overall promotion of comprehensive education reform. It is also a better implementation of the party's 19th National Congress report on "Complete Career". Education and training system, deepening the requirements of integration of production and education, school-enterprise cooperation.

4.2.1.3 Reform of Talent Training Mode Continues to Deepen

In the teaching management of talent training in vocational colleges, there are some misunderstandings. First of all, in the process of pursuing the comprehensiveness of the disciplinary system, the school often neglects the practicability and necessity of the curriculum. In the teaching process, the actual situation of the students and the technical requirements of the current production positions of the employees are not taken into consideration, and the theoretical teaching is emphasized, but the practical teaching is not paid enough attention. Secondly, there is a lack of flexibility in the choice of teaching curriculum and no hierarchical teaching. The development of modern vocational education should focus on the transformation from scale growth to quality improvement. In the process of vocational teaching, it pays attention to the quality evaluation of talent training, and establishes a sound monitoring system and evaluation system for the quality of modern vocational education and the

quality of personnel training.

4.2.1.4 Administrative Management of Organizational Structure

The current organizational structure of vocational colleges includes teaching, students and logistics. The three modes of teaching, student and logistics are used in the mode of administrative management. This kind of administrative management mode does not combine teaching, scientific research and production, but makes each department independent of each other, which is not conducive to the improvement of the comprehensive ability of students in vocational colleges.

4.2.2 Problems in the Development of China's Vocational Education

At present, the main problems facing the development of China's vocational education are: first, the quality of the teaching staff in modern vocational colleges; second, the source of funding for vocational colleges; third, the simplification of teaching and management models, lack of in-depth school-enterprise cooperation and engineering Combine.

4.2.2.1 Construction of the Faculty of Modern Vocational Education

There is a general low level of teacher education, unreasonable job title structure, lack of understanding of the front line of production services, and lack of professional skills and practical teaching ability. The goal of vocational education is to train the first-line application skills talents involved in production and construction and management services. It needs to have a strong professional orientation. The realization of this goal requires the vocational colleges to equip knowledge, apply, and use, and the professional skills are excellent. The lack of practical and experienced double-type teachers and the lack of double-type teachers have seriously affected the quality and reputation of vocational education. Strengthening the construction of the faculty and focusing on building a faculty with a double-skilled teacher as the main body of the faculty is not only an important force for achieving the goal of vocational education, but also the key to whether vocational education can be used to ensure quality. . In addition, the development of vocational education determines that vocational teachers also need to have the professionalism, professional ethics and ability to solve various practical problems. At present, vocational schools are biased towards knowledge transfer, do not pay attention to the improvement of students' ability, and the traditional

classroom teaching mode still dominates. It mainly stems from the lack of professional skills training and training, lack of practical experience, and growth and development are constrained. At present, the problems faced by vocational colleges in the construction of teaching staff are mainly: the unclear training mode of professional construction of teachers, the lack of teachers' growth platform and the long-term operation mechanism of professional construction of teachers, which have become the constraints of the school's rising development. Key factor. How to build a professional management model of teachers and solidly promote the professional construction of teachers has become an inevitable choice for school development.

4.2.2.2 A Single Source of Development Funding Channels for Vocational Colleges

At present, the financial support of vocational colleges in China mainly comes from the government's appropriation. The government's financial support accounts for a high proportion of school income. It also reflects the weak ability of multi-channel funds to raise funds for running schools in China. Strong dependence. Many factors have caused the above problems. First, the lack of national policy support, such as the tax incentives for donors. From the current situation of most donations from colleges and universities in China, it can be said that this policy is the main factor affecting the donation of vocational colleges. One of the factors; secondly, it is related to the awareness of the leaders of various levels and school administrators on the multi-channel awareness of the sources of running funds for higher vocational colleges. At present, the more common concept is that the funds for running public vocational colleges are mainly borne by the government. The multi-channel financing is only an auxiliary means. This mode of running a school is a typical passive school. Therefore, if China's higher vocational colleges are to develop in the next few years, the structure and status of multi-channel financing for education need to be improved. Especially for some research-oriented and influential colleges and universities, making full use of social forces to raise funds through multiple channels is indeed a good way to raise funds for running schools.

4.2.2.3 Vocational Education Teaching Mode Closed

Modern vocational education has the characteristics of occupational and practical, often different from general higher education. Therefore, in the organizational

structure of teaching, vocational education can not copy the mode of ordinary colleges, otherwise it will affect the efficiency of occupation, which is not conducive to the cultivation of vocational education. The quality of the students. In the current education management model, the teaching management mode combining work and study should be given full play. The implementation of this training model includes government, enterprises, and universities, which is an organic combination of these three parties. We must highlight the status and role of the two implementing entities of enterprises and schools. As the main body of the third party of the combination of work and study and enterprise cooperation, the government's main role is to strengthen the guidance of schools and enterprises and promote the true unity of schools and enterprises. This school-enterprise joint school model is not only conducive to the promotion of resource sharing between universities and enterprises, but also to the promotion of our more targeted and oriented team of high-level talents.

At present, the number of vocational education in the number of practice bases is insufficient. The government strengthens the cooperation between enterprises and vocational colleges, and increases the bases and places for students to practice and practice in vocational colleges. The school-enterprise cooperation and the integration of industry and education will help us to strengthen the use of corporate talents, enhance students' professional skills learning and professional ability training, and then make up for the shortcomings of the current dual vocational teachers in higher vocational education colleges. It can also strengthen the cooperation between universities and enterprises, promote the participation of enterprises and schools in the teaching and management of students, establish a sound organization, system and operating environment for the cultivation of talents, so as to achieve a win-win situation for mutual development and mutual benefit. Collaboration results. In addition, the implementation of the combination of work and study is still an all-round, the whole process of the combination of work (practice) and learning (teaching). The so-called all-round refers to the organic combination and coordinated operation of enterprises, schools and governments. The so-called whole process refers to the mode of combining work and study, which is reflected in all aspects of the concept of running a school, the construction of teachers, the teaching process, professional positioning and evaluation of training effects. The combination of engineering and learning is highlighted in the

concept of running a school. The combination of engineering and learning is embodied in the construction of teachers. The combination of engineering and learning is used in teaching methods. The combination of engineering and learning is reflected in the professional positioning, and the combination of engineering and learning is applied to the effect evaluation. In other words, it is to achieve the coordination of the needs of the school's professional and social industries, to achieve the training of talents and the goal of corporate employment standards, to achieve the coordination of the professional skills training of talents and the requirements of corporate jobs. Organize teaching and curriculum according to the work process and the special circumstances of the industry, occupation and profession. Furthermore, in accordance with the organization of this teaching and curriculum, the teaching forms such as work-study and half-study, on-the-job internships, work-study alternation, and industry-university integration are adopted to promote vocational and technical education flexibly and diversely. College teachers and enterprise technicians regularly rotate and exchange roles, and bachelors work in the learning process and learn in the process of work. Through this dual-subject and wrong way, establish a perfect combination of work and study .

4.3 China's Vocational Education Model

At present, China's vocational education management model follows the management methods and teaching modes of domestic colleges and universities. The management mode of ordinary higher education institutions pays attention to the professors of professional knowledge, but does not pay attention to the students' practical ability. Therefore, the current openness of vocational education management in China low. The main teaching task of vocational colleges is to train technical and skilled talents. With the development of market economy, the demand for professional and technical talents in social development has increased, and the development of vocational colleges has ushered in unprecedented opportunities. However, the current teaching mode of vocational colleges is not suitable for cultivating the first-line skilled talents. The management mode of modern vocational education needs to be reformed and innovated. In addition, school-enterprise cooperation and integration of production and education is the basic management mode of vocational education in China, and it

is the inherent requirement for cultivating high-quality laborers and technical and technical personnel. The 19th National Congress of the Communist Party of China clearly stated that deepening the integration of production and education, school-enterprise cooperation The high standard.

4.3.1 Internal Management Mode of Modern Vocational Education

1) Organizational structure. At present, the administrative management system of vocational colleges is mainly based on the organizational structure of education and teaching. Modern vocational education management and production activities, scientific research and development, and education and teaching are independent of each other. The current administrative management mechanism of vocational colleges is not conducive to the improvement of the comprehensive ability and quality of professional talents; 2) teaching operation management. In the operation management of school education, most higher vocational colleges have not really established the concept of people-oriented, and the understanding of training tasks is not comprehensive enough. The situation of educational administration imitation of ordinary colleges and universities still exists. At the same time, in the schedule management, the service-oriented management concept is difficult to implement, and the idea of “regulation” is still commonplace; 3) Teaching quality management. The teaching quality management is imperfect, the concept is backward, and the activity effectiveness is low. First, higher vocational colleges overemphasize the integrity of the disciplinary system. In the training plan, the arrangement of practical courses is too small, the students are basically in the learning stage of the theoretical class, and the emphasis on practical teaching is not enough, resulting in poor practical ability of students. The quality control of higher vocational colleges is not in place, and the employment rate of graduates is not very satisfactory. Secondly, from the perspective of multi-quality, over-emphasis on rules and regulations, distorting the nature of teaching quality management, most of the higher vocational education schools have a small level of hierarchy, school scale, school philosophy, and school curriculum.

4.3.2 Vertical Education Management Mode of Vocational Education

The vertical teaching management mode of higher vocational colleges is divided into vertical hierarchical management institutions, which can be divided into leadership, management and executive levels. The division between the levels of this model is based on the scope of management, division of responsibilities, and depth. Therefore, through the establishment of systems, clear responsibilities, introduction of competition and incentive mechanisms, as a vertical teaching management model of higher vocational colleges, can effectively coordinate And to resolve the communication and connections between the various levels, fully mobilize the enthusiasm of each level. The vertical teaching management mode of higher vocational colleges can be summarized into two aspects: on the one hand, the teaching management and educational administration are effectively divided and coordinated. The vertical teaching management model is to better define the job responsibilities of the two departments of the Teaching Management Department and the Academic Affairs Department, and then to rationally divide and effectively separate them. For higher vocational colleges, the Department of Educational Administration and the Department of Teaching Management are usually located under a teaching management center. For this kind of institutional model, the vertical teaching management mode is conducive to the mutual understanding and coordination between teaching research and teaching implementation, forming an organic whole with clear division of labor and close cooperation.

4.3.3 Talent Training Mode Combining Work and Study

The combination of work and study and the integration of production and education is an important measure for the needs of social talents. It is also the design integration of the top layer. It requires the integration and interaction of the dimensions of system, business, development and mode, so as to realize the mutual cooperation, co-construction and sharing of resources, and finally realize The school is built in the industrial base, built in the development zone, and the profession is built on the industrial chain and built on the demand chain. Post-training is one of the important forms and important ways to train highly skilled personnel and promote the combination of work-study education in higher vocational colleges. The internship in

higher vocational colleges is an important comprehensive practical course. It is jointly participated by the learning enterprise and students. It has the characteristics of diversified management subjects, decentralized internship locations and diversified internships. All the links of the internship training can facilitate the comprehensive and in-depth training of the talent training mode of engineering and learning, and reform. At present, the administrative department of education is arbitrarily special in higher vocational education, and the combination of school and enterprise has a false name. The talent training mode of combining engineering and learning in China is relatively rigid, lacking the flexibility it deserves, and the ideas are not enough to develop and lack innovation. The credit system can no longer be implemented in enterprise internships. The level of academic credentials is single. It is difficult to fill the problem of low enthusiasm of enterprises. It is a common problem. The so-called low, academic gap formed by any scarce job in the human resources market. In the education mode of combining work and study, the enterprise is only the “co-organizer” and the school becomes the “organizer”. In order to improve the enthusiasm of the “co-sponsor” of the enterprise, the government should introduce preferential policies such as tax reduction and tax exemption, and the “organizer” of the school should also take active measures to reduce the burden. “Leave the difficulties to yourself and leave the convenience to other people. The current talent-training model of employment-oriented, work-study, and work-study is aimed at giving full play to the advantages of schools and enterprises in talent training. It will use classroom-based indirect knowledge-based school education and direct access to practical experience and capabilities. The main production site education is organically combined.

4.4 Background Information on Four Vocational Education in Beijing

4.4.1 Beijing Electronic Technology Vocational College

Beijing Electronic Technology Vocational College is a public higher vocational and technical college directly under the Beijing Municipal Education Commission. It is one of the 100 model high vocational colleges under the State’s key construction. In 2007, it was approved by the Ministry of Education and the Ministry of Finance as the project construction unit of the “National Model Higher Vocational College

Construction Plan". In 2010, it was approved by the Ministry of Education as a construction unit for the national comprehensive vocational education comprehensive reform pilot zone. In 2015, it was approved by the Ministry of Education as the first batch of modern apprenticeship pilot units in the country. The school has also been rated as an advanced unit of national vocational education. From 2015, the school will undertake the "high-end technical skills talent training test" in Beijing, take the initiative to carry out the structural reform of the supply side of vocational education, improve the quality and efficiency of the vocational education supply system, and explore high-end technical and skilled talents and high-quality applied talents. The road to cultivation. The college has always adhered to the educational philosophy of opening integration and serving the society, comprehensively deepening the reform of education and teaching, further improving the level of professional construction, adjusting and optimizing the professional structure, innovating the talent training model, and building a one body and two wings talent training pattern, that is, comprehensively improving The quality of talent training is the main body, with the training of "high-end technical skills talents" and "high-quality applied talents" as the two wings, continue to give full play to the characteristics of higher vocational education and traditional advantages, and constantly improve high-end technical and skilled talents and high-quality applied talents. Mutual assistance, integration and development, and a talent training system that goes hand in hand. At the same time, we will further improve the level of international education, expand the scope and scope of social services, comprehensively strengthen the connotation construction, and take a new step in exploring the scientific development path.

4.4.1.1 School Faculty Construction

Beijing Electronic Technology Vocational College has 6235 full-time vocational students, 965 faculty members, and 617 full-time teachers. Among them, teachers with dual-master qualifications account for 73.74% of the total number of full-time teachers. Teachers with master's degree or above account for full-time teachers. 68.72% of the total, teachers with senior titles accounted for 36.47% of the total number of full-time teachers.

Table 4.4 Teaching Practice of the College

No	Index	Unit	Comprehensive	2015	2016
1	Student-teacher ratio	—	≤18	14.28	13.48
2	Proportion of full-time teachers in dual-quality	%	—	78.41	73.74
3	Full-time teacher per capita business practice time	day	—	16.16	14.32
4	The proportion of professional part-time teachers in professional courses	%	—	9.18	6.90
5	Per capita teaching and research equipment value		≥4000	69231.09	107707.33
6	Per capita school practice teaching number	/	—	0.52	55–60
7	Internship time of the extracurricular internship training base	/	—	41	43

Source: According to the Beijing Electronic Technology Vocational College Vocational Education Annual Quality Report.

4.4.1.2 Sources of School Funding

In 2015, the total income of school-running school funds was 579.862 million yuan. The main source of funds was the financial recurrent subsidy income of 347.101 million yuan, the central and local government special investment of 167.29 million yuan, the tuition income of 38.327 million yuan, and other income of 249.3114 million yuan. Comparing the sources of funding for current vocational colleges, government financial allocation is the most important channel, while the proportion of funds provided by enterprises or other channels is low, reflecting the single source of funding for modern vocational colleges, and the participation of social capital is not high.

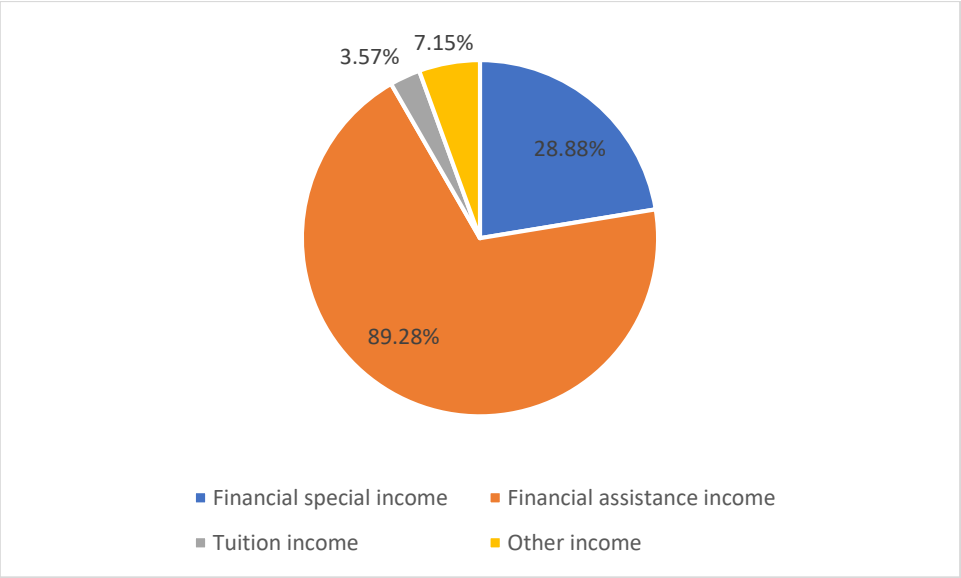

Figure 4.1 Income and Expenditure of Colleges and Universities in 2015

Source: According to the Beijing Electronic Technology Vocational College Vocational Education Annual Quality Report.

4.4.2 Beijing Finance and Trade Vocational College

Beijing Finance and Trade Vocational College is a public higher vocational college in the city. It is a national model high vocational college and a national college graduate with typical experience in employment. It is a civilized unit of the capital and a model school for the Ping An Campus of Beijing University. In 2006, it was rated as an excellent institution in the evaluation of the level of talent training in higher vocational colleges organized by the Ministry of Education. In 2008, he was selected as “National Model Higher Vocational College Construction Plan”. In 2011, it passed the “National Model Higher Vocational Colleges” construction and acceptance with excellent results. In 2014, it was awarded the title of “Beijing Digital Campus Model School”. In 2015, the college was awarded the “Top 50 National Graduate Employment Experiences” and was recognized as one of the three pilot higher vocational colleges by Beijing as a high-end technical and technical talent. It was approved by the Ministry of Education for 100 modern apprenticeship pilot institutions. one. In 2016, the college was awarded the first batch of demonstration and entrepreneurship centers in Beijing.

4.4.2.1 Faculty Construction

In 2016, the ratio of college students to teachers was 12.41, which was 1.19 lower than that in 2015. The proportion of full-time teachers in "double-teacher" was 48.59%, an increase of 4.77% compared with last year. The per-capita practice time of full-time teachers was 8.91 days, an increase of 0.97 days compared with 2015. Part-time teachers accounted for 11.14% of professional classes, a decrease of 0.83% from 2015. The per-capita teaching and research equipment value, the average number of practice teaching stations in the school and the internship time of the per-curricular internship training base were higher than in 2015.

Table 4.5 Teaching Practice of the College

No	Index	Unit	Comprehensive	2015	2016
1	Student-teacher ratio	—	≤18	13.60	12.41
2	Proportion of full-time teachers in dual-quality	%	—	43.82	48.59
3	Full-time teacher per capita business practice time	day	—	7.94	8.91
4	The proportion of professional part-time teachers in professional courses	%	—	11.97	11.14
5	Per capita teaching and research equipment value	/	≥4000	38985.53	46044.62
6	Per capita school practice teaching number	/	—	0.35d	0.38
7	Internship time of the extracurricular internship training base	/	—	6.07	7.31

Source: According to the Beijing Finance and Trade Vocational College Vocational Education Annual Quality Report.

4.4.2.2 School Funding

In the 2015-2016 school year, the total income of Beijing Finance and Trade Vocational College was 342,287,700 yuan, an increase of 13.54.45 million yuan over the previous school year. In terms of income composition, the main sources are financial recurrent subsidy income (including project funds) (63.06%), central or local fiscal special investment (19.42%), tuition income (9.10%), and other income (8.42%).

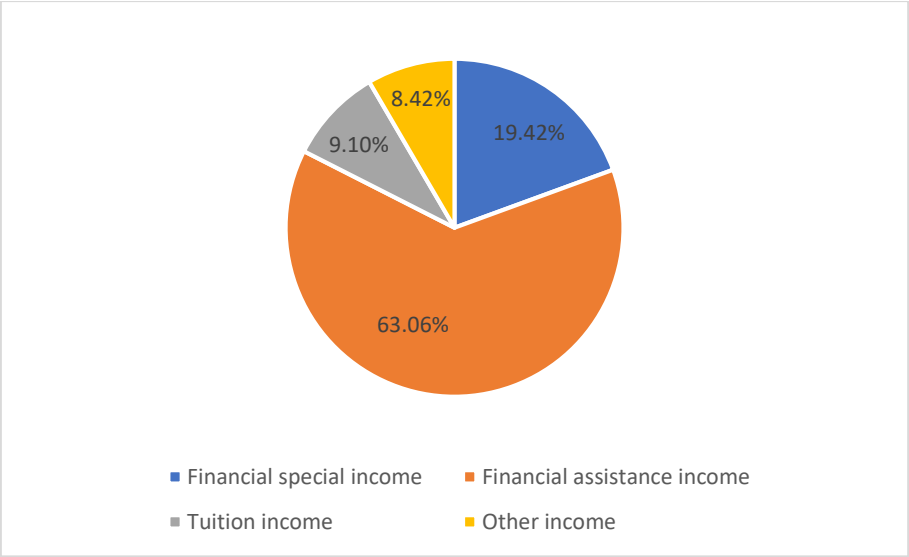

Figure 4.2 Income and Expenditure of Colleges and Universities in 2015

Source: According to the Beijing Finance and Trade Vocational College Vocational Education Annual Quality Report.

4.4.3 Beijing Institute of Industrial Technology

The school takes the cultivation of talents as the foundation, the quality as the core, the open integration as the approach, and the social evaluation as the standard. "School-enterprise interaction, production and education docking, learning and integration", strive to build the school into a distinctive feature by 2020. International leading national model vocational and technical college. In 2000, it was identified by the Ministry of Education as the first batch of demonstration vocational and technical colleges in China. In 2002, it was identified as a national financial focus to support the construction of model institutions. In 2003, in the evaluation of the talent training level of higher vocational colleges organized by the Ministry of Education, it was identified as one of the first eight outstanding colleges in China. In 2007, he was selected as the "National Model Higher Vocational College Construction Plan". In 2010, it passed the "National Model Higher Vocational Colleges" construction and acceptance with excellent results. In 2012, he was awarded the "Top 50 Colleges and Universities for National Graduate Employment Experience". In 2015, it was identified as one of the three pilot higher vocational colleges by Beijing as a high-end technical and technical talent.

4.4.3.1 Construction of the Teaching Staff

Total amount and structure of teachers. At present, the number of faculty members in the school is 521, and there are 503 faculty members, including 363 full-time teachers, 81% of professional teachers, and 11.4:1. The total number of teachers in the class reached 419, including 15 provincial and above teaching teachers, 46 young and middle-aged teachers in Beijing, and 2 masters of Beijing "High-initiation Program". They are the director and deputy director of the Industry Vocational Education Steering Committee of the Ministry of Education. Members, 11 national and Beijing higher vocational colleges personnel training level assessment experts; there are 11 municipal innovation teams and teaching teams. Among the full-time teachers, 33 have positive professional titles, accounting for 9% of full-time teachers, and 118 have deputy senior titles, accounting for 32.5%. There are 35 doctors (9.6%) with a master's degree and 271 (74.7%) with a master's degree. At present, the school employs 187 skilled craftsmen as part-time teachers, and 16 foreign teachers from the United States, Britain, Australia and Canada are engaged in front-line teaching.

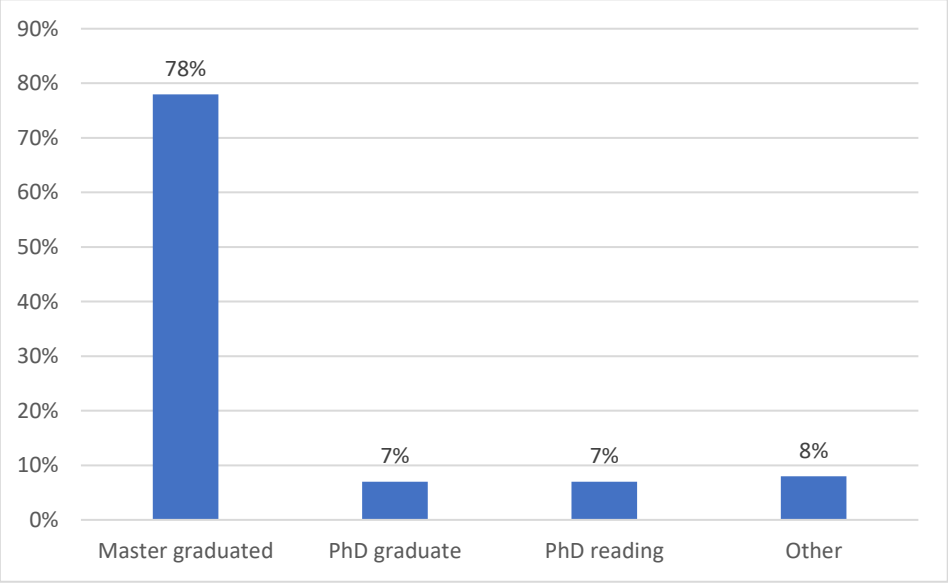

Figure 4.3 Construction Status of the Faculty Team in 2015

Source: According to the Beijing Industrial Vocational and Technical College Education Annual Quality Report.

Table 4.6 Teaching Practice of the College

No	Index	Unit	Comprehensive	2015	2016
1	Student-teacher ratio	—	≤18	14.00	11.40
2	%	per cent	—	73.50	74.50
3	Full-time teacher per capita business practice time	day	—	6.28	5.36
4	The proportion of professional part-time teachers in professional courses	%	—	8.38	19.36
5	Per capita teaching and research equipment value	/	≥4000	79038	92071.34
6	Per capita school practice teaching number	/	—	0.37	0.46
7	Internship time of the extracurricular internship training base	/	—	20.05	20.35

Source: According to the Beijing Industrial Vocational and Technical College Education Annual Quality Report.

4.4.3.2 Sources of School Funding

In 2015, the actual total income was 33,641,200 yuan. Among them, the financial appropriation income was 2,963,082 yuan, the business income was 375,293 yuan, the subsidiary unit paid 550,000 yuan, and the other income was 2.044 million yuan. Among them, the financial allocation accounted for 88% of the funds for running schools, the business income accounted for 11%, the affiliates accounted for 0.1%, and other income accounted for 0.09%. It can be seen that financial allocation is the main source of funding for vocational colleges. The proportion of financial support for enterprises participating in vocational colleges is relatively low, indicating that the income channels for running schools in vocational colleges are single.

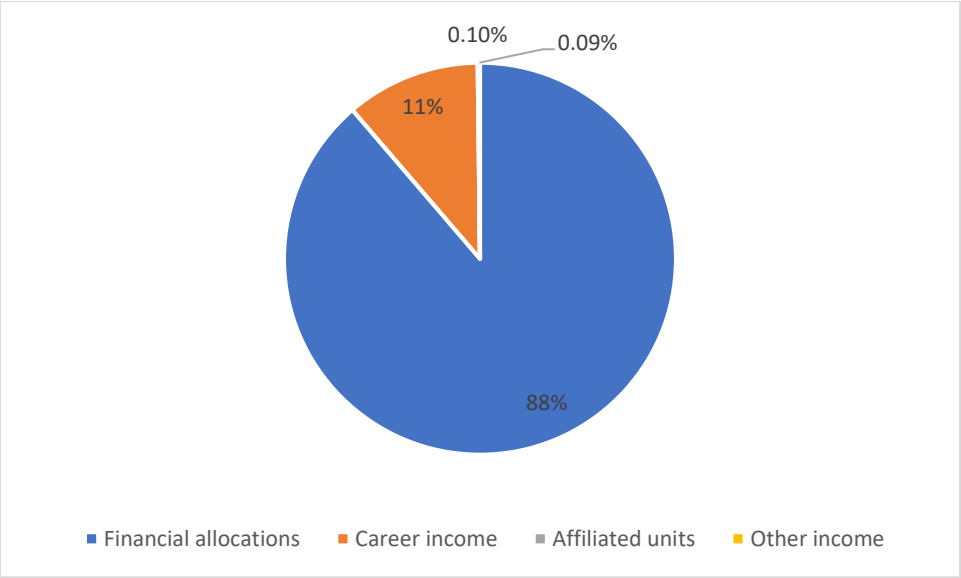

Figure 4.4 Distribution of Funding for Colleges and Universities in 2015

Source: According to the Beijing Industrial Vocational and Technical College Vocational Education Annual Quality Report.

4.4.4 Beijing Agricultural Vocational College

Beijing Agricultural Vocational College is a full-time public general higher education institution approved by the Beijing Municipal People's Government and filed by the Ministry of Education. It is affiliated to the Beijing Rural Work Committee and the education authority is the Beijing Municipal Education Commission. The college adheres to the mission of "based on the capital, facing the whole country, serving the 'three rural issues'", adhering to the spirit of "Lead, Practice, Knowledge, and Mind", and implementing the principle of "taking morality first and comprehensively educating people, taking practical teaching as the main body". The school-running concept of "winning education and service, open education and continuous innovation", deepening the reform of education and teaching, focusing on building a major, strengthening the cooperation between schools and enterprises, innovating talent training models, creating an excellent and integrated teaching team, and building a comprehensive, The productive training base will enhance the scientific research and the service level of "agriculture, rural areas and farmers", expand exchanges and cooperation at home and abroad, and give full play to the role of demonstration. At present, the college covers

an area of 81.22 hectares, with a construction area of 369,900 square meters and fixed assets of 552 million yuan. There are 9 departments including horticulture, animal husbandry and veterinary, food and bioengineering, as well as mechanical and electrical engineering colleges, international education colleges and continuing education colleges; there are more than 5,000 full-time students. There is a school in the school, there is a park in the field, the school practice site covers an area of more than 700 acres, built with color seedling breeding center, plant pest control center, teaching animal hospital, breeding breeding center, food safety testing center and other 37 comprehensive On-campus training base and 156 laboratories, the proportion of productive training in the school is over 80%; together with 330 off-campus compact training bases, it provides a strong guarantee for effectively realizing the combination of engineering and learning. The employment rate of graduates is ten consecutively. The annual average is over 98%.

4.4.4.1 Faculty Construction

The college has 397 full-time teachers. There are 276 teachers with master's degree or above, accounting for 69.52% of full-time teachers, including 42 doctoral teachers and 234 master's degree teachers. Among the full-time teachers, there are 152 teachers with professional and technical positions above the senior level, accounting for 38.29% of the full-time teachers, including 19 professors and 133 associate professors. The college attaches great importance to the training of dual-teachers and adopts various measures to improve the quality of the dual-teachers. By encouraging teachers to work in the suburbs of Beijing, to practice in enterprises, to participate in multi-post exercise and professional training, to introduce double-skilled full-time teachers from the front line of industry enterprises, to hire enterprise lecturers and part-time teachers of vocational education group members to deepen school-enterprise Cooperation and other means, multi-channel, multi-channel, and multi-method effectively improve teachers' practical teaching ability.

Table 4.7 Teaching Practice of the College

No	Index	Unit	Comprehensive	2015	2016
1	Student-teacher ratio	—	≤18	9.26	8.85
2	Proportion of full-time teachers in dual-quality	%	—	76.49	75.57
3	Full-time teacher per capita business practice time	day	—	20.06	21.28
4	The proportion of professional part-time teachers in professional courses	%	—	6.90	3.17
5	Per capita teaching and research equipment value	/	≥4000	27139.60	40079.80
6	Per capita school practice teaching number	/	—	0.54	1.23
7	Internship time of the extracurricular internship training base	/	—	3.53	3.17

Source: According to the Beijing Agricultural Vocational College Education Annual Quality Report.

4.4.4.2 Funding for Running a School

In the income structure, the tuition fee income is 18,227,600 yuan, accounting for 3.57% of the total income; the financial subsidy income is 455,921,400 yuan, accounting for 89.28% of the total income; the other income is 36,600,800 yuan, accounting for 7.15% of the total income.

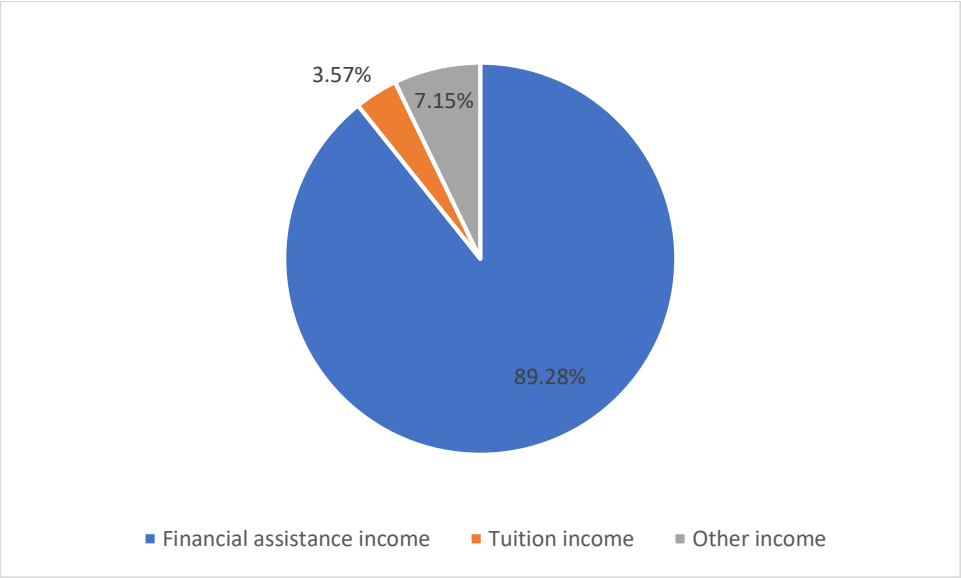

Figure 4.5 Distribution of Funding Sources for Colleges and Universities in 2015

Source: According to the Beijing Agricultural Vocational College Vocational Education Annual Quality Report.

4.5 Management Models of Four Vocational Education in Beijing

4.5.1 Education Management Mode of Beijing Electronic Technology Vocational College

4.5.1.1 Implementing the Talent Training Model

Expand the training of high-end technical skills talents. In 2016, the school will continue to undertake the "2+3+2" high-end technical and technical talents training project in Beijing, build a "overpass" training system for high-tech and technical skills, and create a "through train" for talent training to achieve high school education and career. Skills education and undergraduate education are "melt through" training, opening up new horizons and opening new paths for the growth of high-level professional talents in the capital. Under the guidance of the Municipal Education Commission and the Municipal Education Commission, the school further expanded the enrollment scale and pilot scope of the "2+3+2" high-end technical and technical talents training and training, in addition to the original internal training and external training. The high-tech innovative talent training program, the Sino-foreign

International College's continuous training pilot project and the Beijing College project have broadened the way to train high-quality applied talents, enriched the school's school-running level, and further deepened the reform of the talent training model.

4.5.1.2 Vigorously Promote the "3+2" Middle and High Vocational Education Project

Under the guidance of the Beijing Municipal Education Commission in 2016, the school continued to carry out the "3+2" middle and high vocational work connection. The existing four majors of NC technology, electronic information engineering technology, electrical automation technology and character image design are in progress. Higher vocational work. In 2012, the school started to cooperate with Beijing Jinlu Science and Technology School to carry out the "3+2" middle and high vocational education of "CNC Technology". The first batch of students entered the school in 2015 and accepted 2 years of higher vocational education after 3 years of secondary vocational education. Cultivate, under the unified guidance of the Beijing Municipal Education Commission, the school will jointly develop the integrated talent training program and curriculum standards with Beijing Jinyu Science and Technology School, and equip the corresponding teachers and experimental training conditions to ensure the smooth completion of the middle and high vocational work. In 2016, in addition to the students of CNC technology who cooperated with Beijing Jinlu School, they successfully entered the high-level education of our school. The students of electronic information engineering technology who cooperated with Beijing Electric Engineering School also entered the higher vocational stage. Currently, "3+ 2 The middle and high vocational colleges are connected to nearly 100 students. With the comprehensive development of cooperation, the number of classes and the number of students in the middle and high vocational schools will gradually increase.

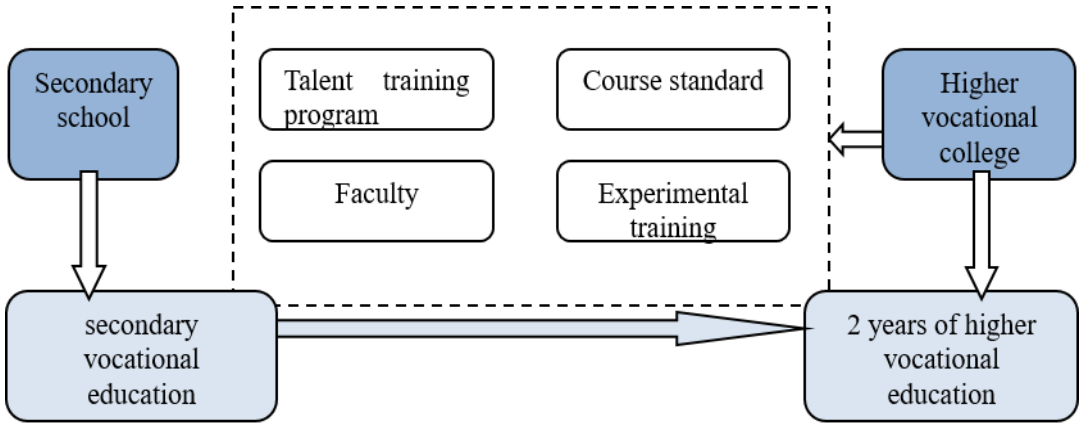

Figure 4.6 Beijing Electronic Science and Technology Vocational College 3+2 Middle and High Vocational Linkage Management Mode

Source: Authors draw the proceeds.

4.5.1.3 Exploring the Reform of Modern Apprenticeship Pilot Teaching Management

In 2015, the school was approved by the Ministry of Education to become one of the first batch of 100 modern apprenticeship pilot schools in the country. It signed cooperation agreements with Beijing Benz, German Daimler, Beijing Subway, Hach Company and Jebsen Century. Schools and enterprises jointly develop talent training programs, develop courses and teaching materials, design and implement teaching, organize evaluation and evaluation, and carry out teaching research. The school undertakes systematic professional knowledge learning and skill education. The cooperative enterprises adopt the form of apprentices and apprentices according to the training program. Post skill training, establish a school-enterprise collaborative education mechanism, and achieve dual-sports sports people. In 2016, according to the unified arrangement of the Ministry of Education, the school further improved the task book of the modern apprenticeship system, focusing on all 44 higher vocational professions, closely focusing on the coordinated development of Beijing-Tianjin-Hebei and the transformation and upgrading of Beijing's industrial structure to serve Starting from the demand of high-tech talents in the capital and development zones, five majors were selected as the pilot program of modern apprenticeship. According to the training method of "joint enrollment, joint training, and integrated education", the

corresponding teaching management system and mechanism were improved. To clarify the duties and tasks of schools and enterprises in the process of project implementation; to formulate an enrollment system that reflects the characteristics of modern apprenticeship; the school and enterprise jointly formulate a detailed segmentation education program, and schools and enterprises jointly cultivate high-end technologies of high-end, internationalization and modernization. Skilled talent.

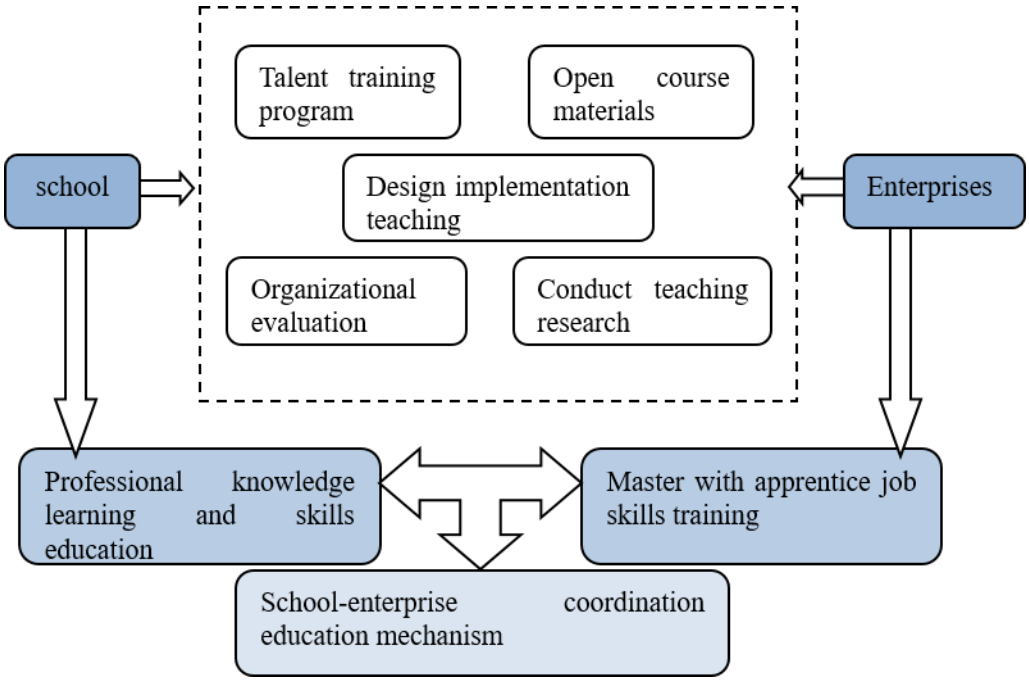

Figure 4.7 Modern Apprenticeship Management Mode of Beijing Electronic Technology Vocational College

Source: Authors draw the proceeds.

4.5.1.4 Deepen the Integration of Production and Education and School-Enterprise Cooperation

In 2016, in order to further promote school-enterprise cooperation, strengthen scientific and standardized management, and establish a long-term mechanism for integration of production and education, school-enterprise cooperation, the school has formulated the “School-Enterprise Cooperation Management Measures” to guide the school-enterprise cooperation of the school. School-enterprise cooperation

management coordination department, implementation of school-enterprise cooperation responsibility unit, the school-enterprise cooperation into the assessment of the secondary school. Continuously improve the curriculum update, order training, post internship, production training, exchange appointments, staff training and other systems, innovative school-enterprise cooperation and training talent model. Continuously expand the breadth and depth of school-enterprise cooperation, and seize the different characteristics of modern large-scale enterprises and small and medium-sized enterprises in various fields such as personnel training, technology research and development, skills training, and social services, strengthen cooperation in different forms, and maintain cooperation with enterprises. The close relationship enriches the connotation of school-enterprise cooperation and continuously innovates forms of cooperation. Establish a communication and sharing platform between school-enterprise cooperation, build a technical process and product development center, an experimental training platform, a skill master studio, etc. The teaching chain docks the production chain, promotes the accumulation and innovation of technical skills, and further integrates production and education. Deepen, realize the sharing of interests between the school and the enterprise in all aspects, and achieve win-win cooperation.

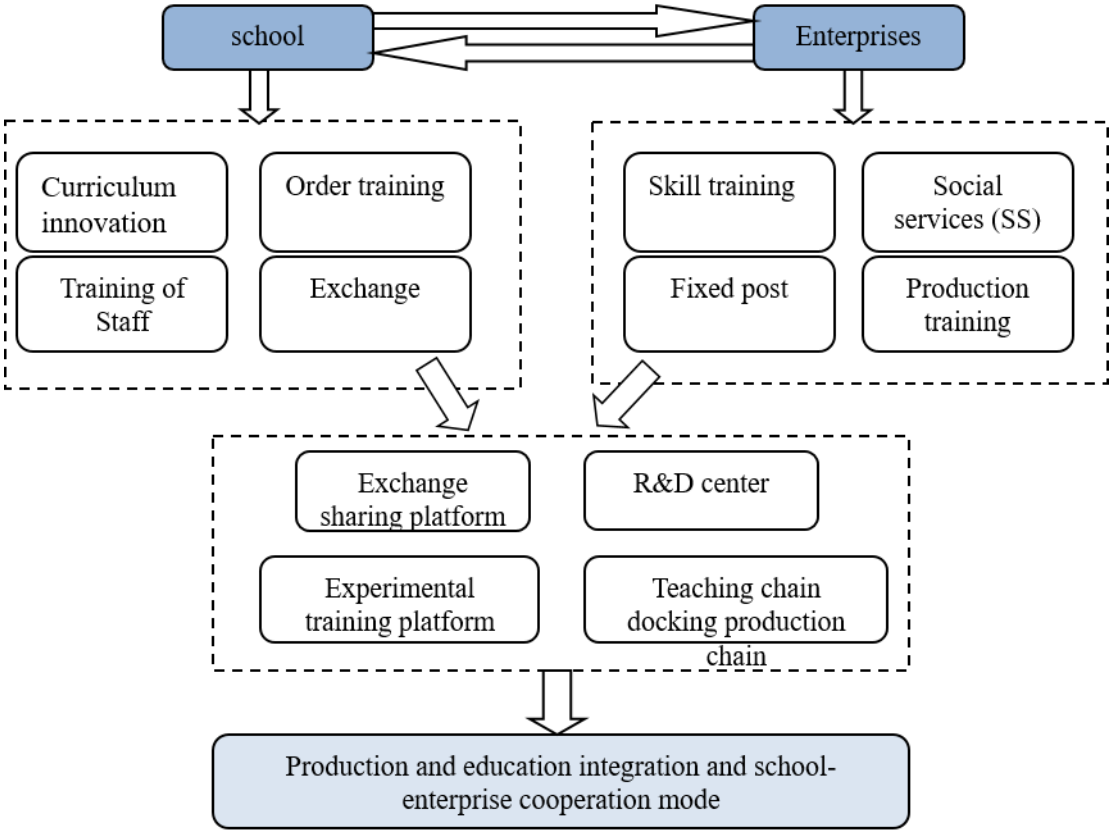

Figure 4.8 Production and Education Integration and School-Enterprise Cooperation Management Model

Source: Authors draw the proceeds.

In 2016, the school continued to sign an order-training agreement with Beijing Mercedes-Benz Automobile Co., Ltd., Jaguar Land Rover Automobile Co., Ltd., China Post Group Beijing Company, Beijing Subway Operation Company Co., Ltd., Jinggang Metro Company, Jebsen Century Company and other enterprises to set up an order class. Provide high-end technical skills for enterprises; CNC equipment application and maintenance, vehicle inspection and maintenance technology, mechatronics technology, environmental engineering technology, digital media art design, 5 majors rely on modern apprenticeship pilots and cooperative enterprises to carry out dual-sports sports people, The school and the enterprise mutually engage and use each other, and jointly set up a teacher teaching team to jointly build a coach-type faculty team to achieve deep cooperation between schools and enterprises. In addition, according to the current economic development of the capital and the requirements of

modern manufacturing, high-tech industries and cultural and creative industries for the structure of high-end skilled talents, the school has systematically built “basic skills”, “comprehensive skills”, “production skills” and “innovative capabilities”. Four levels of progressive practice teaching system. Construct a practical teaching course for the cultivation of students’ innovative ability. At the same time, construct a training base according to the standards of engineering training standards and the deep integration of schools and enterprises.

4.5.1.5 Strengthening the Construction of Double-Faculty Faculty

In 2016, the school continued to implement the “People’s Team Construction Plan of Beijing Electronic Technology Vocational College”, which will improve the overall quality of teachers, establish excellent professional teams and improve the dual-type quality of teachers as the goal of the construction of teaching staff, and create a quality improvement for teachers. The platform creates an environment conducive to the growth of teachers. This year, we will focus on the following four aspects of the construction of a double-faculty faculty: 1. Implement a professional teaching team construction plan in the school, establish a trapezoidal faculty structure with sustainable development; 2. Implement a “part-time teacher work fang” construction plan. Strengthen the deep cooperation between schools and enterprises; 3. The dual-skilled quality of teachers; 4. Carry out the “Three Hundred Projects” activities of “100 teachers to practice in the enterprise, develop 100 courses of engineering and learning, and compile 100 pieces of engineering and teaching materials”. Teachers hang on the post (job) to go deep into the enterprise, participate in technological innovation, undertake specific tasks such as production, scientific research and management, grasp the core technical direction of the professional field, and master vocational soft skills.

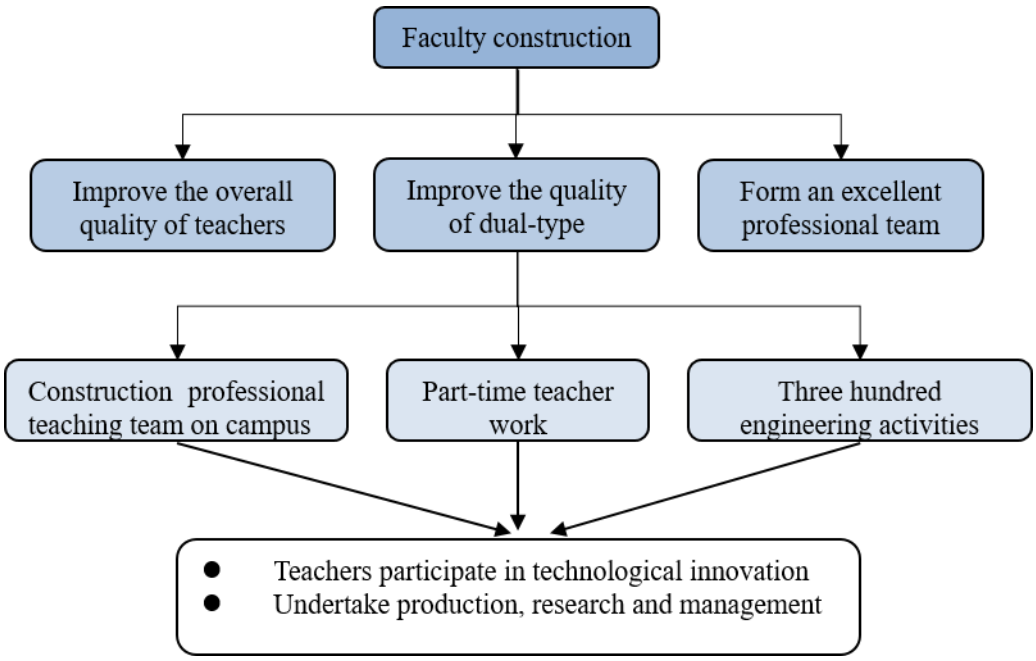

Figure 4.9 Construction of the Teaching Staff in Vocational Colleges

Source: Authors draw the proceeds.

Vocational colleges pay attention to the construction of double-teachers. On the one hand, teachers have mastered a wealth of professional teaching knowledge through their own schools. On the other hand, they participate in the production line of the school and participate in the production line of the enterprise to understand the actual production of the enterprise. The technical skills of the demand, through participating in the company's technology research and development innovation, help themselves improve their understanding and mastery of professional knowledge. Not in the teaching process, away from the actual production teaching. The construction of the double-teacher team contributes to the improvement of the teaching quality of vocational colleges, and makes the graduates of vocational colleges suitable for the employment requirements of enterprises.

4.5.1.6 New Mode of International Cooperation in Running Schools

In 2016, the school actively cooperated with Germany, France, Canada, New Zealand and the United Kingdom through several rounds of negotiations and consultations to sign the Memorandum of Cooperation, the Cooperation Framework Agreement and specific implementation agreements, and established the path for

students to study overseas. Sexually promoted the implementation of the project. 1) Sino-French cooperation model: adopting the 7-year Sino-French joint training method, namely “2+2.5+0.5+2” mode. After completing the Chinese-level study (two years of high school study, two-and-a-half-year Chinese-French teaching reform course, complete the corresponding language preparation and professional preparation), the project will complete the six-year preparatory study in France. After that, he entered the second year of the School of Science and Technology and obtained a staged certificate (Dut), followed by a third year of French undergraduate study. Upon passing the examination, students will receive a bachelor’s degree from the French Ministry of Education and recognized by the Ministry of Education of China. 2) Sino-German cooperation model: adopting the 7.5-year Sino-German joint training method, namely “2+2+3.5” mode. Two years of high school study, two years of Sino-German cooperative teaching reform course, completed the corresponding language preparation and professional preparation in the past four years, in order to obtain the qualification of admission to the German University of Applied Sciences. Then, in Germany, first completed the 6-month internship and intensive preparation courses required by different majors, and finally entered the first year of the German University of Applied Sciences to start a three-year undergraduate study.

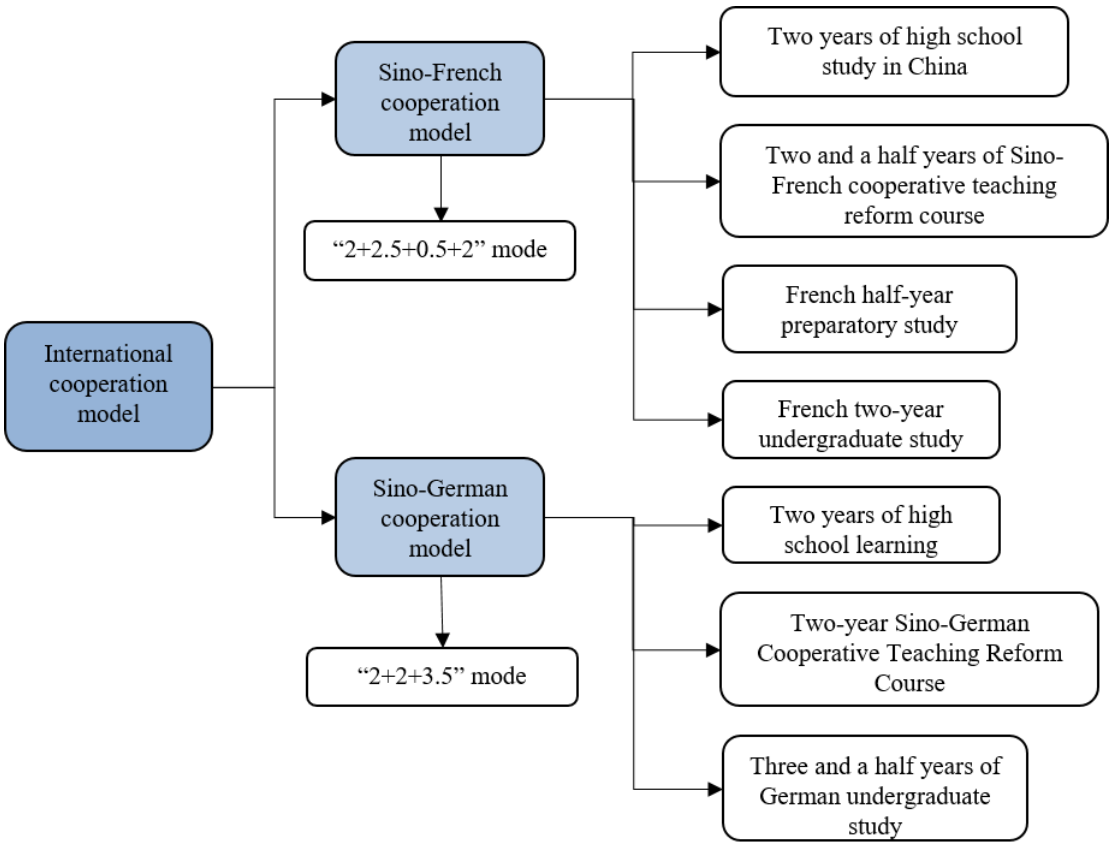

Figure 4.10 New Mode of International Cooperation in Running Schools

Source: Authors draw the proceeds.

The new mode of international cooperation in vocational education is conducive to the cultivation of professional professionals with international vision. Vocational college students go abroad to study and participate in training, can master more advanced production techniques and technical processes, and improve their skills. At the same time, it is also conducive to upgrading the technical content of human capital. After the students of vocational colleges return to China, they will bring advanced foreign production technology and help Chinese enterprises to technological innovation.

4.5.2 Education Management Mode of Beijing Finance and Trade Vocational College

4.5.2.1 Implementation of High-End Technical Skills Talent Training Pilot Project

In 2016, the college continued to promote the high-end technical skills talent training pilot project, and cooperated with the Capital University of Economics and Business, Beijing Technology and Business University, Beijing University of Architecture, and foreign undergraduate colleges to open a CPA, CFA, and international 13 professional operation directions, including chain operation manager, fashion visual design and brand management. In accordance with the basic ideas of seven-year continuous training, the college's overall optimization, system design curriculum system and practical teaching system, the construction of basic culture courses, vocational field courses (including professional platform courses, professional core competence courses, career direction courses), practice innovation Class three types course system.

4.5.2.2 Vigorously Promote the "3+2" Middle and High Vocational Education Project

Solidly promote the 3+2 middle and high vocational education and reform of the school. In 2016, our hospital steadily expanded the scope of the 3+2 middle and high vocational education reform experiment, and 13 majors and 13 Beijing secondary vocational schools to carry out the school. The logistics management and marketing professions have two high-school semester students, and the tour guide has a high-school semester in the school, and the learning status is good. The experimental majors actively communicated with the docking secondary vocational colleges, held 3+2 vocational college students and teachers symposiums, conducted teaching workshops, and analyzed the 3+2 middle and high vocational students' academic situation and current courses. In-depth study of talent development programs and teaching plans with the implementation of teaching.

4.5.2.3 Promote the Integration of Production and Education and the Management Mode of School-Enterprise Cooperation

In 2016, Beijing Business and Trade Vocational Education Group promoted the construction of "domestic first-class" vocational education group in the

aspects of improving the influence of the group, promoting the integration of production and education, improving the ability of production, education and research, and comprehensive literacy of students. In response to the monthly call of the Beijing Municipal Education Commission's Vocational Education Group, Beijing Business and Education Group supported the first Beijing-Tianjin-Hebei Innovation and Entrepreneurship Instructor Training Camp. More than 60 teachers and students from nearly 30 middle and higher vocational colleges participated in the training camp. Learn. Hosted the 2016 Beijing Business Vocational Education Group's integration of production and education, the leadership of the Municipal Education Commission, industry, enterprise experts, relevant members of the Beijing Business and Education Group, more than 350 representatives from 117 institutions in Beijing, Tianjin, Hebei, Jiangxi, Inner Mongolia, etc. Experts attended the meeting to discuss how innovative entrepreneurship education leads the integration of production and education and the spirit of artisans. It provides theoretical guidance and practical experience for vocational colleges to implement the principle of "mass entrepreneurship, innovation" and promote innovation and entrepreneurship education reform.

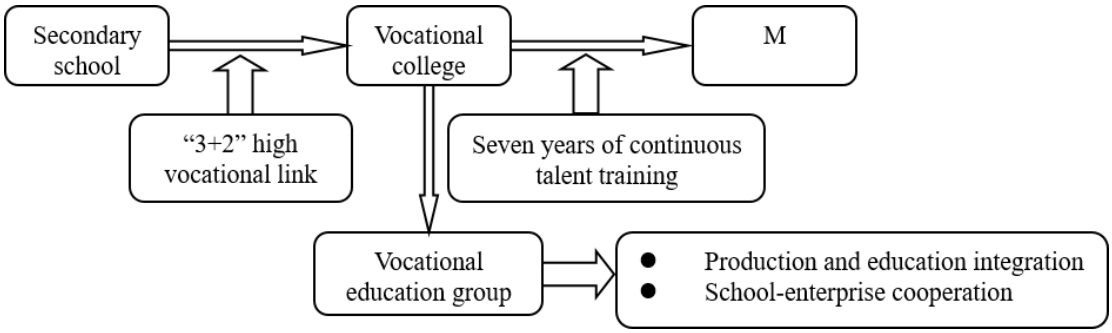

Figure 4.11 Management Mode of Vocational Education Talents
Source: Authors draw the proceeds.

The "3+2" higher vocational link project between vocational colleges and secondary vocational schools can ensure that vocational college students have mastered the professional knowledge and operational ability in secondary vocational schools before entering the school, and improve the quality of vocational college enrollment. In addition, the "Seven-Year Through Talent Training" program of vocational colleges and

undergraduate colleges enables vocational college students to master and consolidate their professional knowledge and practical ability, and enter a higher level of undergraduate education, and more professional courses. With good professional knowledge and practical ability, it ensures that vocational college graduates can make greater breakthroughs in technological innovation in the process of undergraduate education. In addition to teaching management, vocational colleges also rely on the establishment of vocational education groups to strengthen the integration of production and education and school-enterprise cooperation, so that students can obtain internship opportunities in advance, and practice the technical skills they have learned in the school into the internship process. However, the current vocational colleges have less interaction with the government and enterprises. The government has not fully utilized its advantages in information consultation and comprehensive coordination to promote cooperation between vocational colleges and enterprises.

4.5.2.4 Faculty Construction

The college strengthened the training of teachers. In 2016, the number of full-time teachers participating in provincial training increased by 77% compared with 2015. At the same time, the college strengthens cooperation with enterprises, explores the double-subject education mechanism and the modern apprenticeship system of school-enterprise cooperation, pays attention to improving the double-teacher quality of teachers, and accumulates 575 teachers into enterprise practice.

4.5.3 Education Management Mode of Beijing Industrial Vocational and Technical College

4.5.3.1 Faculty Construction

Teacher construction and reform, double teacher training. The school encourages teachers to enter the enterprise to exercise, participate in production, management, product development and other activities, implement targeted training in different levels and categories, and improve the professional ability of teachers in all aspects. Strengthen the awareness of training in the secondary department, encourage the full-time teachers and management staff by organizing intra-school training, setting up special programs for “professional ability improvement”, and relying on municipal “sports strong education”, “professional teachers” and “information competition”.

Participate in training on and off campus. In the 2015-2016 school year, the participation rate of participating teachers reached 100%. Actively declare the “Special Funding for Foreign Teachers in Beijing”, continuously optimize the structure of the teacher training program, and improve the level of full-time and part-time teachers. By hiring a skilled craftsman as a practical teaching instructor, rewarding 3 hours of work per day, improving the quality of teachers’ double divisions; optimizing the double division structure of the school. The national (outside) training is mainly for intermediate and deputy high-level teachers, with a total of 34 training sessions. Using non-working hours, the teacher’s English level is upgraded and regular training is held twice a week. Throughout the semester, teachers’ enthusiasm for learning is high.

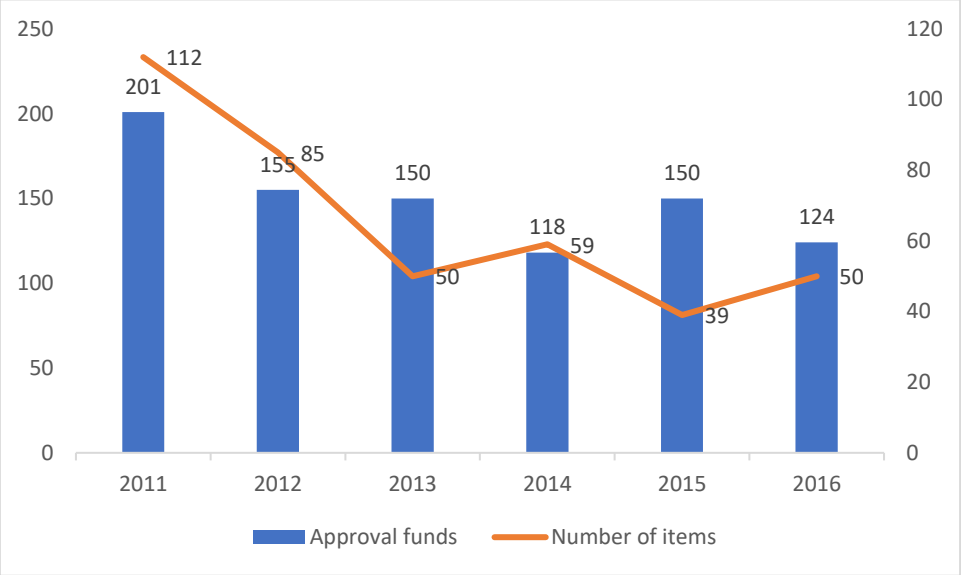

Figure 4.12 Funds for Approval of Project Funds in Vocational Colleges

Source: The author draws the data based on the data.

4.5.3.2 Teaching Construction and Reform

In view of the growth rules of high-end technical skills and the growth characteristics of vocational education students, the school relies on scientific research, takes reform as the starting point, continues to promote teaching and research, and continuously deepens education and teaching reform. In 2016, it has established 45 projects for teaching and research reform. 94 million yuan, achieved remarkable results

in professional construction, curriculum construction, double-teacher training, and teaching method reform. Professional docking industry, deep integration of production, study and research to enhance the economic development capability of the service area. In 2016, the school opened a total of 29 majors, covering 10 major professional categories and 4 major professional groups, forming a professional layout of "key professional guidance, main professional support, short-term professional supplement" to serve the economic development of Beijing. Curriculum construction and reform, the curriculum as the carrier of the implementation of high-quality personnel training program, is the basis of professional construction. In the 2015-2016 school year, the total number of courses offered in the whole school was 2,455. On average, each class opened 13.56 courses per academic year, totaling 147,203 hours, of which the theoretical + practical courses (category B) and practical courses (category C) accounted for the total hours. 35.19% and 26.24%, the specific course type settings are shown in the table.

4.5.3.3 Promote the Integration of Production and Education and the School-Enterprise Cooperation Management Model

Construction of an internship training base. The school attaches great importance to practical teaching. According to the requirements of "school-enterprise interaction, production and education docking, learning to be one", the school has built 4 production training enterprises and 18 training bases in the school. There are more than 162 stable and off-campus training bases, including 5 training bases supported by the central government and Beijing Municipal Finance. In accordance with the "true equipment operation, real project training, true environment education" and training The requirements have formed a variety of on-campus production training base construction modes such as school-enterprise co-construction, teaching factory type, school-run enterprise type, etc., and perfected the system from "single item to comprehensive, from simulation to real, from school to off-campus". Practice skills training system to achieve integration of teaching, training and vocational qualification certification.

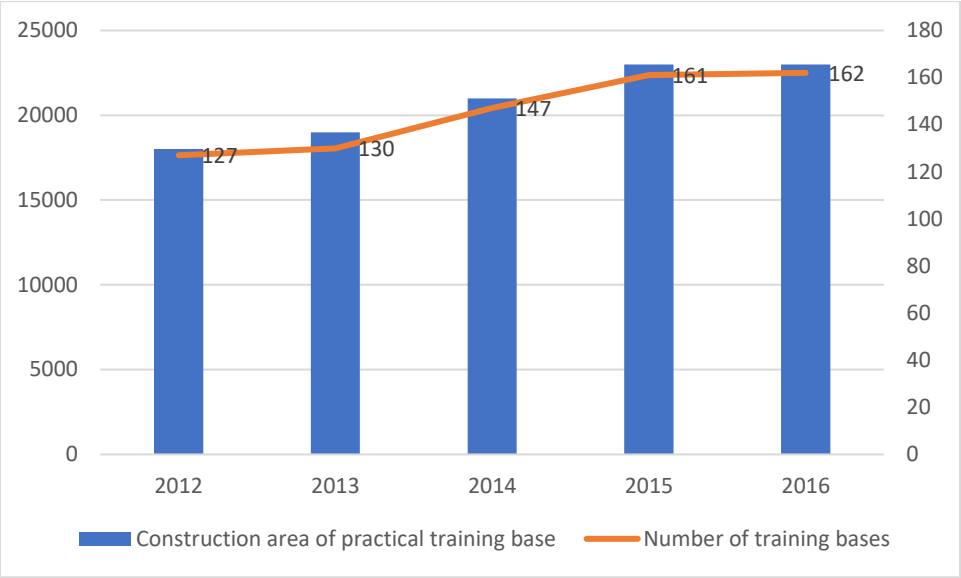

Figure 4.13 Situation of Vocational Training Bases in Vocational Colleges

Source: The author draws the data based on the data.

4.5.3.4 Multi-dimensional Cooperation, the Establishment of Beijing Urban Construction and Management Vocational Education Group

Over the years, the school has tracked regional industry development and industry demand, and actively carried out all-round, in-depth and pragmatic school-enterprise cooperation, constantly innovating the school-enterprise cooperation model, opening up school-enterprise cooperation content, and innovating school-enterprise cooperation to train high-end technical skills talents. Established a school-enterprise cooperation model of “School + Technology Park”, “Professional + Large Enterprise”, “Professional + Leading Enterprise + Enterprise Alliance” to realize “talent education, equipment sharing, technology sharing, cultural integration, management and interoperability” Actively explore the new mechanism for cooperation between vocational colleges and industry enterprises to cultivate talents, serve the capital industry’s upgrading and efficiency, and modern urban development needs for skilled talents. In June 2016, the school took the lead and united the Beijing-Tianjin-Hebei industry, enterprises and institutes. The school and other social organizations established the Beijing Urban Construction and Development Vocational Education

Group. The teaching group has set up five professional committees of urban architecture and surveying, urban electromechanical engineering, urban information technology, urban commerce and service, and urban safety management. A total of more than 100 companies have joined. At present, a total of 45 cooperation intentions have been reached among the members of the Vocational Education Group; under the framework of the Beijing Urban Construction and Management Vocational Education Group Charter, 24 cooperation agreements have been signed; 6 project cooperation agreements have been signed, and the series of cooperation results are vocational education. Group member units school-enterprise, school-school, school-school-enterprise provide a paradigm for in-depth integration development, and the effect of group-based education is beginning to appear. Serve the national development strategy, and dock the China Manufacturing 2025 proposed to promote the development and industrialization of intelligent engineering machinery, service robots and other products, the school established the Industrial Robot Association with the robots representing the comprehensive application of mechatronics advanced technology as the carrier, founded The Robotics Service Center of the Western Region of Beijing, through the combination of relevant professional curriculum teaching and the daily activities of the Association, enhances the quality of professional personnel training, provides high-quality technical services, and closely links professional construction with industrial development, and successfully walks in the forefront of industrial development. At the same time, the school actively responded to the coordinated development of the country's Beijing-Tianjin-Hebei integration and the development strategy of the Belt and Road. It has gone to many vocational colleges in the Beijing-Tianjin-Hebei region to teach the construction experience of robotics associations and the experience of "immersive" innovative talent training model reform. The synergy between the technical level and technical service capabilities of the Beijing-Tianjin-Hebei region has led to the training of robotics technology, teaching innovation and entrepreneurship development strategies, and assisting in the establishment of robotics professional associations in Xinjiang Light Industry Vocational Technical College and Agricultural Vocational Technical College. Development of robotics in vocational colleges in the region.

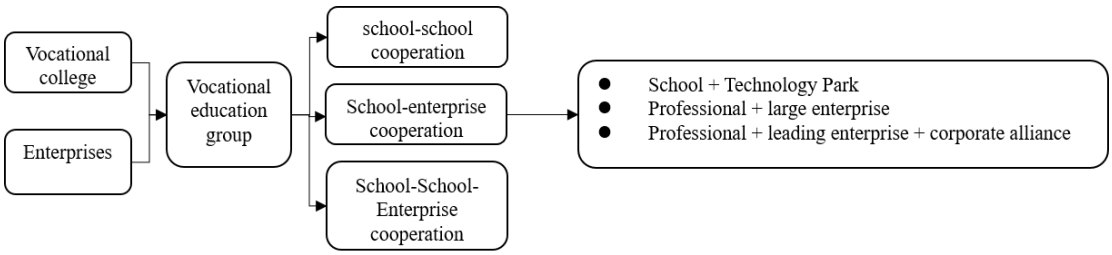

Figure 4.14 Situation of Vocational Training Bases in Vocational Colleges
Source: Authors draw the proceeds.

The modern vocational education group jointly established by vocational colleges and enterprises helps to achieve all-round, in-depth and pragmatic school-enterprise cooperation, and the vocational education group has also realized "talent education, equipment sharing, technology sharing, cultural integration". Management and interoperability. It not only helps the vocational college students to learn the technology to gain practical experience, but also to master the necessary work skills. In addition, it also helps enterprises to follow up the latest technological processes developed by vocational colleges in a timely manner, so that the updated technology application of the enterprise production process To provide the efficiency of enterprise production and promote the common improvement of vocational colleges and enterprises.

4.5.4 Beijing Agricultural Vocational College

4.5.4.1 Faculty Construction

The construction of the teaching staff highlights the professional characteristics. Combining the characteristics of agricultural vocational education, the college actively expands its thinking according to the different positions and abilities of teachers, and establishes four kinds of teacher evaluation systems, including teaching-oriented, scientific research-oriented, teaching and research, and agricultural extension professors, and innovates the teacher technology to work in the suburbs of Beijing. The faculty has improved and served the working mechanism. At present, 10 batches of more than 100 teachers have been dispatched to serve. In particular, combined with the needs of the "three rural" in the suburbs of Beijing, the series of

agricultural extension professors was opened up, and the promotion model and working mechanism dominated by the promotion professors were formed, which strengthened the characteristics and advantages of vocational education. The proportion of teachers who focus on training double-teachers has grown steadily. The college attaches great importance to the training of dual-teachers and adopts various measures to improve the quality of the dual-teachers. By encouraging teachers to work in the suburbs of Beijing, to practice in enterprises, to participate in multi-post exercise and professional training, to introduce double-skilled full-time teachers from the front line of industry enterprises, to hire enterprise lecturers and part-time teachers of vocational education group members to deepen school-enterprise Cooperation and other means, multi-channel, multi-channel, and multi-method effectively improve teachers' practical teaching ability.

4.5.4.2 Teaching Construction and Reform

Adapting to the needs of urban urban agriculture development in Beijing and optimizing the professional layout, in 2016, in order to further adapt to the needs of urban urban development in Beijing, the college continued to optimize the professional layout and improve the professional structure. There are 35 higher vocational colleges (including 37 in the direction), of which 24 majors directly cultivate high-skilled talents for Beijing urban agriculture development; there are 5 national key majors, 3 municipal key majors and college-level majors27 It has formed a three-level professional construction system at the national, municipal and hospital levels. It has formed six professional groups with obvious advantages and outstanding characteristics and strong comparative advantages with Beijing's economic development, such as gardening and horticulture, animal husbandry and veterinary, food and biological engineering, civil engineering, modern service management and agricultural economic management. New expertise in winemaking technology (the direction of winemaking technology), water supply and drainage engineering, mechanical design and manufacturing (computer-aided design and manufacturing). In 2016, the college recruited high-end technical and technical talents for the first time to train students. After social needs research, six new major categories, including agriculture, forestry, animal husbandry, fishery and civil engineering, and 16 majors such as urban floral landscape design, genetic engineering and biological breeding, were compared. It has

attracted the junior high school graduates to choose to enter the college for seven years of continuous learning. The curriculum construction highlights the main body of practical teaching. The curriculum construction highlights the main body of practical teaching. In the 2015-2016 school year, the college offered a total of 866 courses. In terms of course types, class B (theoretical + practice) courses started the most, reaching 621, accounting for 71.71% of the total number of courses, and class A (pure theory) courses reached 64, accounting for 7.39% of the total number of courses, C (pure Practice class) The course starts with 181 courses, accounting for 20.90% of the total number of classes.

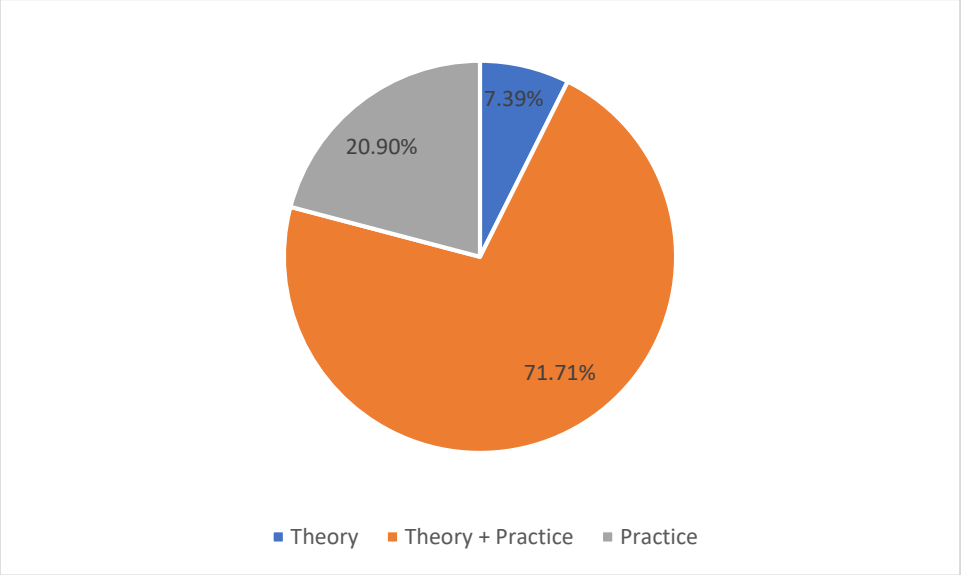

Figure 4.15 Course Setting in Vocational Colleges

Source: The author draws the data based on the data.

4.5.4.3 Build a Platform to Promote the Deep Integration of School and Enterprise

To build a platform and improve the school-enterprise cooperation operation mechanism, the college has successively established Beijing Urban Agriculture Vocational Education Group and China Urban Agriculture Vocational Education Group, and established 6 professional committees to carry out in-depth cooperation between different professions, and explore the establishment of department

heads and cooperation enterprise leaders. The conference system, professional leaders and enterprise part-time teachers contact system, constantly improve the school-enterprise cooperation operation mechanism and talent training mode, and build a number of close-type off-campus training bases, providing convenience for students to internship and employment. Beicai Group invested RMB 1 million to set up “Professional Education Scholarship” and “Scholarship Scholarship”. In January 2016, the College signed a strategic cooperation framework agreement with Beijing Vegetable Basket Group Co., Ltd., both parties on modern urban agricultural professional talent training, agricultural product production and processing, Extensive and in-depth cooperation has been carried out in related fields such as agricultural and sideline products logistics, Internet + agricultural product supply and property management. To meet the needs of the society, we have set up an enterprise order training class. Based on the policy of “cooperative education, cooperative employment, and cooperative development”, the college actively sets up enterprise order training classes to promote the seamless connection between talent cultivation and social needs. In 2016, the College and Shounong Group held the first “Directional Training Course for Dairy Breeding Talents”, “Hailian Litong Volunteer Orientation Class” organized by Beijing Hailian Litong Economic and Trade Co., Ltd., and Global Travel Service Limited Liability The “Global Travel Orders” class held by the company started, and the joint ventures with Beijing Meilian Zhonghe Animal Hospital Alliance and Beijing Barbie Animal Hospital Group started. Establish a vocational education group and innovate the school-enterprise alliance mechanism. In 2014 and 2015, the college took the lead in setting up Beijing Urban Agriculture Vocational Education Group and China Urban Agriculture Vocational Education Group. The Group has established a management system led by Shounong Group and Beijing Agricultural Vocational College with the emphasis on urban agricultural connotation research and urban agricultural development talent training. It has established a dairy cow health breeding master studio, a dairy cow disease prevention master studio, and a garden. Landscape master studio and management master studio, further promoted the deep integration of school and enterprise.

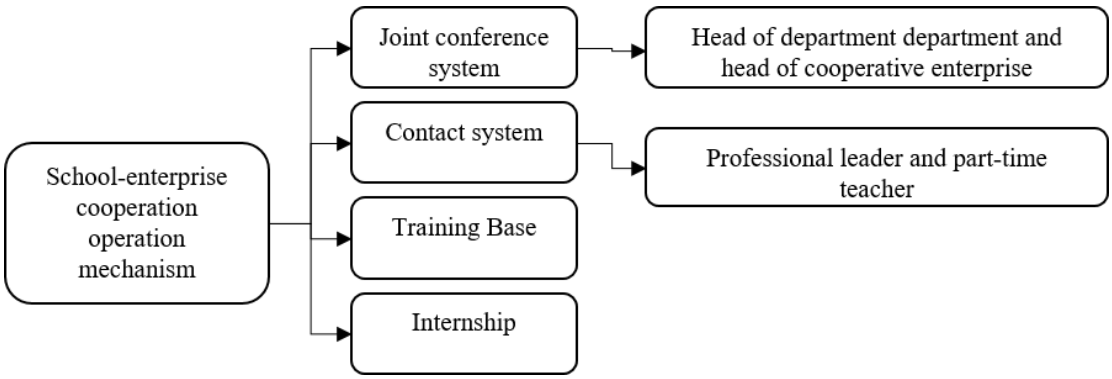

Figure 4.16 Operational Mechanism of School-Enterprise Cooperation
Source: Author's drawing

4.5.4.4 Modern Apprenticeship Vocational Education Management Mode

School-enterprise cooperation, actively explore modern apprenticeship. The Decision of the State Council on Accelerating Modern Vocational Education and the Opinions of the Ministry of Education on Launching the Modern Apprenticeship Pilot Program clearly require to carry out a pilot program of modern apprenticeships for joint enrollment and joint training between schools and enterprises, improve support policies, and promote the integration of schools and enterprises. Educate people. Taking this opportunity as an opportunity, the college encourages all majors and cooperative enterprises to jointly explore the talent training mode of "work-study integration, rational integration, and post apprenticeship", and establish a vehicle testing and maintenance technology major as a pilot, and Beijing Hailian Litong Economic and Trade The company and Beijing Zhengde Yongcheng Automobile Trading Co., Ltd. have deep cooperation and jointly explored the modern apprenticeship training mode. The modern apprenticeship pilot project was officially launched. At the beginning of 2016, the pilot program of the modern apprenticeship system for automotive testing and maintenance technology was officially launched. The institute has deep cooperation with Beijing Hailian Litong Economic and Trade Co., Ltd. and Beijing Zhengde Yongcheng Automobile Trading Co., Ltd. to jointly explore the talent training mode of modern apprentices, and formulate relevant work plans and management manuals. Pilot. The school and the enterprise respectively set the training objectives for each stage of each grade, and mainly focus on the apprenticeship of the enterprise, and

combine the interests of the students to determine the internship position in both directions. In the apprenticeship process, a school-enterprise joint assessment model is established, and a credit-based flexible teaching management approach is adopted. Apprentices can complete the training of high-level skills projects, such as “first-level assistant technicians” and “second-level assistant technicians”, and obtain the skills of third-level assistant technicians in order to allow graduation. , issued a diploma.

4.5.4.5 Running Schools in Various Forms, Building a Modern Vocational Education System

Cooperate with secondary vocational schools to expand the scale of the middle and high vocational posts. In 2016, the college actively carried out 3+2 joint training with five schools including Beijing Changping Vocational School and Beijing Environment and Art School. At present, there are 5 schools affiliated with the higher vocational education in our school, involving 6 majors. Implement the relevant spirit of the Education Commission and explore the “2+3+2” breakthrough talent training model. In order to implement the spirit of the “Decision of the State Council on Accelerating the Development of Modern Vocational Education” and the “Notice of the Beijing Municipal Education Commission on Conducting the Training Experiment of High-end Technical Skills in 2016”, the Municipal Education Commission approved the review, and the 2016 College for the first time in Beijing Students enroll high-end technical skills. The college cooperated with Beijing No. 12 Middle School to carry out high school quality education, and cooperated with four undergraduate colleges of Beijing Technology and Business University, Beijing University of Architecture, Beijing Agricultural College and Capital University of Economics and Business to carry out undergraduate degree education, through the integration of various advantageous resources. The integrated training program is achieved, the professional goal is to achieve high-end, the talent growth overpass is built, and the high-end technical skills talents are trained to train the “through train”, aiming at cultivating high-end technical and technical personnel who serve Beijing’s economic and social development and industrial transformation and upgrading. The college attaches great importance to the high-end technical skills talents training project, established a leading group, formulated a work promotion plan, carried out social needs research, identified 16 students to enroll students, revised the talent training program, and publicly recruited

high school teachers for the society. 13 people invited Beijing Industrial Vocational College, Beijing Finance and Trade Vocational College and other related responsible teachers to come to the school to exchange experiences, organize teachers to go to the 12th and brother universities to study, and carry out policy and business training for the project. Employ a full-time and part-time supervisory expert to supervise and guide the school.

4.6 Defects and Problems in the Management Models of Four Vocational Education in Beijing

4.6.1 Problems in Education Management Mode of Beijing Electronic Technology Vocational College

In 2016, although the school has achieved a series of achievements in the reform of personnel training mode, scientific research and social services, education and teaching, it has the goal of building a domestic first-class, internationally renowned, distinctive and high-level higher vocational college. A certain gap is mainly manifested in:

4.6.1.1 Talent Training Model Needs to be Further Deepened

Over the past year, under the guidance and support of the government departments, the school has actively explored the reform of the talent training model, further expanded the pilot scale of the “2+3+2” high-end technical skills talents, and initially constructed the “one body and two wings”. The pattern of talent cultivation, but how to rely on the traditional advantages and characteristics of running a higher vocational school, there is still some work to be done to continuously improve the talent training model. In the future, the school will continue to strengthen the integration of vocational education in the basic education stage, systematically design the integrated talent training program for 7 years, relying on the faculty strength and training conditions of the higher vocational colleges, in accordance with the overall design, step by step implementation The principle is to develop innovative courses suitable for the characteristics of students in the training program, so that students can get in touch with the content of vocational education in advance, and lay a certain professional foundation for entering the vocational education stage in the future. At the same time,

relying on professional teachers, enterprise R&D personnel and part-time teachers to build an innovative guiding team to jointly guide students to carry out high-level research on innovative topics, extend students' exploration of professional knowledge, and achieve mutual help and coordinated development.

4.6.1.2 The Depth and Breadth of School-Enterprise Cooperation Needs to be Further Strengthened

The school has long adhered to the concept of "integrated development", especially in recent years, relying on the modern manufacturing vocational education group and the comprehensive reform pilot zone to carry out school-enterprise cooperation in an orderly manner, but the level of cooperation is not deep enough, and the form of cooperation is relatively simple. . In the future, the school will closely focus on the needs of the transformation and upgrading of Beijing's industrial structure, and at the same time close to the actual situation of the school's own transformation and upgrading, select key enterprises and high-quality enterprises in the economic and social development of the capital and development zones as the preferred target of school-enterprise cooperation. The object is to continuously expand the scope of school-enterprise cooperation. Relying on the pilot work of modern apprenticeship system, we will continue to deepen the form and content of school-enterprise cooperation. Focusing on the development needs of Beijing's high-tech industry, schools and enterprises jointly determine the talent training objectives, jointly formulate talent training programs and teaching plans, and jointly complete the teaching process. At the same time, we constantly adjust the professional structure around the production needs of enterprises, and the school-enterprise cooperation to build an integrated curriculum system, strengthen the construction of integrated training bases, and form an integrated teaching team, so that the content and quality of school-enterprise cooperation are the same. A new level will effectively improve the quality of personnel training. The school-running and research-based school-running mechanism has not really formed. The school-running model of higher vocational education institutions has not formed a long-term, stable and close combination of production, study and research. The school-enterprise cooperation stays in the internship and the appearance of part-time teachers. The cultivation of supply and demand mechanisms. Some colleges have short running time, lack of experience, and no guarantee of

reciprocal conditions for cooperation with enterprises. It is very difficult for schools to seek internship training bases, and cooperation with enterprises is relatively poor. While guiding the establishment of modern systems, the government did not formulate specific legal guarantees for the operation of enterprises, lacked guidance for enterprises to participate in the reform of higher vocational education, and failed to effectively encourage enterprises and schools to participate in vocational education. At the same time, enterprises believe that higher vocational colleges have a long training period and high cost, and pay attention to vested interests. Therefore, the employing department does not really participate in the education and teaching process, lacks the enthusiasm for cooperation with the school, and passively accepts student internships. The practice base construction and social training of most colleges have not yet achieved substantial results.

4.6.1.3 The Level of International Education Needs to be Further Improved

The goal of school talent training is high-end, internationalization and modernization. The current internationalization of the school has also achieved certain achievements. It has introduced a series of international vocational qualification standards and curriculum systems, and has carried out some research with universities outside the country. The docking of majors and courses, hired some professional and foreign teachers to go to the school to teach, and achieved the purpose of “introducing” international education, but the “going out” in the process of international education is not enough, first of all Relying on the existing international cooperation projects and the external training in the continuous training experiment, the school will promote the internationalization of schools, develop international talents, and cultivate high-end technical skills with international vision for international large enterprises and universities outside the country. Talents and high-quality applied talents, build and export the vocational education brand of the Institute of Electric Power, improve the international competitiveness of the school; secondly, establish the international high-end technical skills talents training standards, and actively develop internationally recognized industry or professional teaching Standards, building an international bilingual course to attract foreign students from abroad Be educated to improve the international reputation of the school; finally, actively strengthen foreign exchanges,

use the national “Belt and Road” strategy and service “Made in China”, strengthen vocational education cooperation with neighboring countries, and provide technical support and employee training services for international enterprises. Look for the right time to export the educational resources outside the country (region), and actively participate in the World Vocational Skills Competition to improve the international influence of the school. This will lay the foundation for the construction of internationally renowned high-level vocational colleges.

4.6.2 Problems in Education Management Mode of Beijing Finance and Trade Vocational College

The number of students continues to decrease, and competition in colleges and universities is intensifying. The number of students in Beijing’s college entrance examinations will continue to decrease in the next five years. The enrollment policy of foreign students will continue to tighten. Enrollment faces changes from “buyer market” to “seller market”. How to achieve scale expansion to quality improvement The transformation, from the demand for service progression to the demand for service learning, to take the road of quality and differentiation, and to enhance core competitiveness in competition, is an arduous task facing the college.

The upgrading of talent demand, the advancement of Internet technology, the coordinated development strategy of Beijing-Tianjin-Hebei and the implementation of the national innovation-driven development strategy, the rapid development of “Internet +” has promoted the rapid transformation of Beijing’s industry into a high-tech direction, and the talents need to be significantly improved. How the college development adapts to the market demand, how the professional cluster form matches the industrial development form, how the talent training adapts to the Internet +, and the forward-looking talent training requirements such as technological progress is an urgent task facing the college.

The institutional mechanism is not live, and the development difficulty is increasing. With the deepening of education reform, there is still a big gap between the quality, ability, structure and development requirements of the college talent team, and there is a lack of high-level “double-teacher” teaching team and professional leaders. The existing school system mechanism does not match the development requirements,

and the management efficiency is not high. Facing the new situation and new problems, it is an important task for the college to implement shifting and upgrading with the new engine of deepening reform.

4.6.3 Problems in Education Management Mode of Beijing Industrial Vocational and Technical College

First, the high-end technical skills training model that meets the requirements of Beijing's capital positioning and industrial structure adjustment needs to further deepen the reform. Second, the school-enterprise cooperation system that closely links the industry and enterprises needs to be improved. The modern apprenticeship system needs further exploration. The level of technical service capabilities and the combination of production, education and research needs to be improved. Third, international cooperation in running schools needs to seek new breakthroughs.

4.6.4 Problems in Education Management Mode of Beijing Agricultural Vocational College

1) Insufficient competitiveness in individual professional markets. Individual professions are weak in terms of professional connotation, curriculum system, practical teaching, etc., lack of market competitiveness, can not meet social needs, and are at a disadvantage in terms of enrollment and employment. 2) Enrollment in the continuous training program is not ideal. In 2016, the college enrolled students with high-end technical skills for the first time. The students were affected by many factors such as admission policies, admission methods, and social cognition. The admission results were not satisfactory. The plan was 500 and the actual admission was 105. 3) The training of teachers is slightly insufficient. In 2016, the content of the teacher training in the college was not rich enough, lacked pertinence, and the number of trainings was small, which made it difficult to meet the actual needs of teachers. 4) School-enterprise cooperation is not deep enough. In terms of cooperation between colleges and enterprises, there is a lack of close school-enterprise cooperation, and there is not enough depth in terms of human resources, financial resources and material resources. Order training and modern apprenticeships are relatively small.

Combined with the problems existing in the education management mode of four vocational colleges in Beijing, it is found that the higher vocational colleges have a lower level of hierarchy. Higher vocational and technical education was once clearly defined in China and higher vocational education, and its status is relatively low. It is in undergraduate colleges. Staying at the specialist level has a certain impact on the normal development of higher vocational education. The quality of students in higher vocational colleges is poor, the graduates are difficult to find work, and the cooperation between schools and enterprises stops at a low level. The mode of cooperation between education and enterprises in higher vocational colleges basically belongs to schools to cater to enterprises. To cater to enterprises, the main status of schools may be gradually lost. The dual-system education management model in Germany is reflected. Higher vocational colleges in China should formulate strategic plans that are in line with the state and their own development, strengthen their own undergraduate quality, establish credibility and good image in the public mind, and avoid the possibility of losing the main status of the school.

Enterprises can bring greater impetus to the development through the school-enterprise cooperation development model, and may also have a certain hindrance for its development. In the actual development process, it is the obstacle factor far greater than its promotion. Input-output problem: The period of training talents is long, the cost is high, and the investment in the short-term is greater than the output. The enterprise pays attention to the vested interests and does not favor long-term investment education. At the same time, the education department has not taken appropriate measures to respond to market changes, and the response is relatively lagging. It is easy to cause the market-oriented activities of enterprises to influence the planning, organization and implementation of normal education in schools, and bring unpredictable factors to the long-term stable cooperation between schools and enterprises. The government has not played a corresponding role in the development of the school. The role of the government is particularly important in the development of higher vocational education. The cooperation between schools and enterprises is enhanced. The cooperation model between schools and enterprises lacks a system. The government on how to strengthen enterprises and schools. The specific implementation rules of the cooperation model are few, making the cooperation between schools and enterprises

become superficial. The government should monitor the quality of both schools and enterprises, reduce the risk of cooperation between schools and enterprises, and provide development space for the development of the two.

4.7 The Function of the Government in the Management of Four Vocational Education in Beijing

4.7.1 Beijing Electronic Technology Vocational College

4.7.1.1 Government Funding Support

Intensify investment and help the construction and development of the school. In 2016, the Ministry of Education, the Beijing Municipal Education Commission and the Beijing Municipal Finance Bureau continued to support the school funding, with a total investment of 167,290,360 yuan. The school uses the special funds of the central and local governments to invest in the school's daily teaching, training base construction, personnel training and infrastructure transformation.

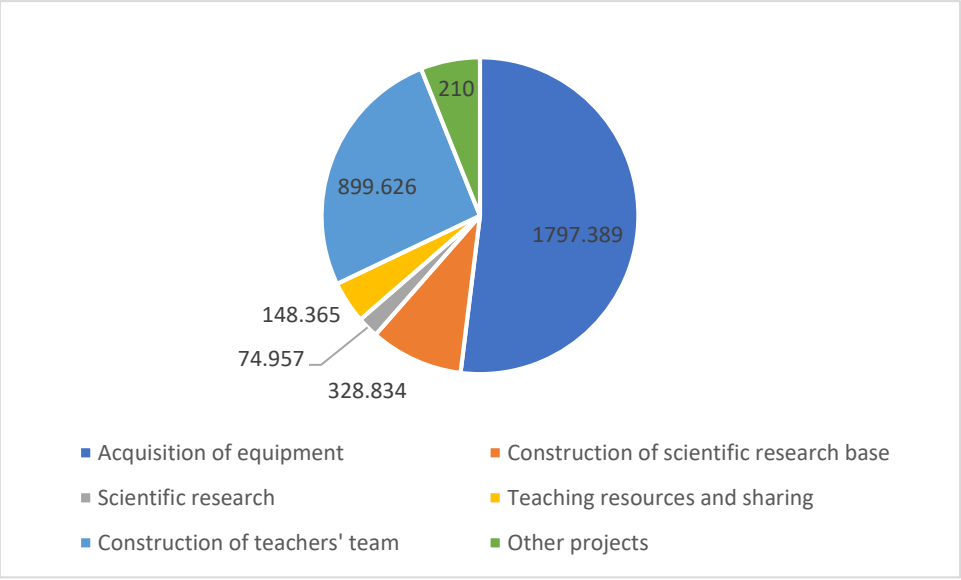

Figure 4.17 Financial Arrangement of Vocational Colleges

Source: The author draws the data based on the data.

4.7.1.2 Policy Support

In 2015, the Beijing Municipal Education Commission issued the "Notice on Conducting the Training Experiments for High-end Technical Skills Talents" (Beijing Jiaozuo [2015] No. 5) and the Supplementary Notice on Conducting High-end Technical Skills Talents Training Experiments (Beijing Jiaotong University) Cheng [2015] No. 8) and other documents guide the school to carry out the 2+3+2 high-end technical skills talents through the training work. Under the support of a series of supporting policies such as enrollment, student status, teaching and finance formulated by the Beijing Municipal Education Commission and the municipal finance department, Beijing Electronic Technology Vocational College was one of the first three pilot schools. In 2016, the Municipal Education Commission issued the "Notice of the Beijing Municipal Education Commission on Conducting the Training of High-end Technical Skills Talents in 2016" (Beijing Jiaozuo [2016] No. 5) document, based on the 2015 high-end technical skills talent training test. Further expand the scope, increase the cultivation of high-tech and innovative talents, the Chinese-foreign international colleges through training trials and the Beijing College's continuous training trials, further broaden the channels for training high-quality applied talents, enrich the school's school-running level, and smoothly carry out various In the teaching work, first try to explore and construct a modern vocational education system.

4.7.1.3 Coordinated Development

Actively coordinate guidance and support the construction of vocational education groups. In 2016, Beijing Modern Manufacturing Vocational Education Group received strong support from the Beijing Municipal Education Commission, Beijing Municipal Finance and Machinery Commission and Beijing Economic and Technological Development Zone. According to the Group's Articles of Association and work plan, this year's Vocational Education Group is located in the Municipal Education Commission. Under the guidance of the four specific tasks: 1) to explore a new model of deep cooperation between schools and enterprises, start and collect the school-enterprise cooperation projects that enterprises and vocational colleges can do, and start to build a shared resource pool of school-enterprise cooperation projects. 2) Using the Group's platform to carry out various forms of production and education docking activities, and launched a series of seminars on cross-border innovation in bio-

industry-industry integration, and carried out activities such as high-end equipment manufacturing talent demand seminars. 3) Strengthen the construction of information workers' work mechanisms, establish a team of part-time information officers inside and outside the group, and promote the joint construction and sharing of information resources. Formulate the Working Methods for Information Workers, gradually form a systematic information exchange and sharing mechanism, and use information technology to establish a communication mechanism for information workers. (4) Organize the theme series of "School-enterprise cooperation, integration of production and education". This year, the Beijing Municipal Education Commission provided 2 million yuan of special funds to promote the integration of production and education, professional training and integration of production, education and research in the vocational education group.

4.7.2 Beijing Finance and Trade Vocational College

4.7.2.1 Government Funding Support

In the 2015-2016 school year, the total expenditure on running school funds was 311.5725 million yuan, which guaranteed the increase of equipment procurement fees, daily teaching expenses, teaching reform, and teacher team construction. The expenditure mainly includes infrastructure construction costs (14.73%), equipment procurement fees (10.64%), teaching reform research (5.60%), teacher construction (0.85%), book purchase (0.64%), and daily teaching expenses (7.36%). Other expenses (60.17%), etc.

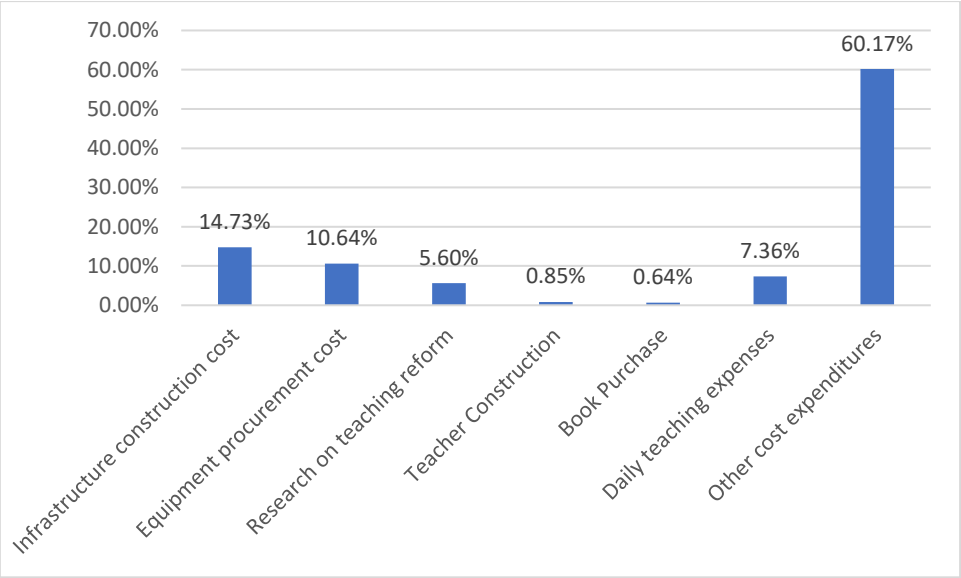

Figure 4.18 Financial Arrangement of Vocational Colleges

Source: The author draws the data based on the data.

4.7.2.2 Policy Support

In order to further promote the comprehensive reform of the education field and explore the modern vocational education system, on the basis of continuing the "3+2" middle and high vocational education reform experiment, this year the Municipal Education Commission will focus on promoting high-end technical skills talents to train pilot projects and further expand the trial. Scope, increase project categories and training models, and ensure the smooth implementation of projects from all aspects.

In terms of organizational leadership, the Municipal Education Commission set up a leading group for the training of experimental work, and the relevant departments will guide the relevant schools to do all the work of reform experiments in accordance with the division of responsibilities. Beijing Education Examination Institute researches and develops enrollment admission methods, entrusts Beijing Academy of Sciences to conduct follow-up research and quality monitoring on the implementation process, supports the research on the development of relevant professional talent training programs, and explores the rules for training high-end technical skills. In terms of funding, the funds required for reform experiments in

experimental colleges are guaranteed according to the number of students, and the experimental colleges are supported to introduce high-quality educational resources at home and abroad through cooperative education and government procurement services. Support the experimental colleges to introduce shortage of excellent teachers and management personnel from home and abroad. Committed to the government's special fund support during study abroad, enjoy the relevant scholarship policy according to school regulations during the study period in China.

4.7.3 Beijing Industrial Vocational and Technical College

4.7.3.1 Funding Support

The income from the actual situation in 2015 was 33,641,200 yuan. Among them, the financial appropriation income was 2,963,082 yuan, the business income was 375,293 yuan, the subsidiary unit paid 550,000 yuan, and the other income was 2.044 million yuan.

4.7.3.2 Policy Guidance

In 2016, the school leaders and all the teachers and students further understood and implemented the relevant policy documents issued by the Ministry of Education and Beijing to promote the development of vocational education, especially the "Beijing-Tianjin-Hebei Collaborative Development Plan" and the "Higher Vocational Education Innovation Development Action Plan". (2015-2018), Several Opinions of the Ministry of Education on Deepening the Reform of Vocational Education and Teaching to Improve the Quality of Talent Cultivation, Beijing Medium and Long-Term Education Reform and Development Outline, and Opinions on Implementing the Modern Vocational Education System in Beijing And the People's Government of Beijing Municipality on Accelerating the Development of Modern Vocational Education Implementation Opinions and other documents, focusing on Beijing's goal of building a world-class harmonious and livable capital and the four centers of urban function positioning, combined with the actual situation of the school Great discussion on education and teaching ideas, aiming at positioning, clarifying efforts, formulating relevant implementation plans, ensuring timely and effective implementation of various policies, realizing education modernization in Beijing by 2020, and building a fair, high-quality, innovative and open capital education And

advanced learning city, enter to teach Modern international city and the ranks of human resources for the advantage to contribute their efforts.

4.7.3.3 Supervision and Evaluation

The quality of vocational education is the lifeline of the survival and development of vocational colleges and is the eternal theme of vocational colleges. Under the guidance of the Beijing Municipal Education Commission and the Beijing Education Supervision Office, our school has set up a special teaching quality supervision center for daily quality monitoring and evaluation. In the long-term practice of running schools, the school adheres to the idea of "quality-based education, prevention-oriented, process control, and continuous improvement", with the core of improving teaching quality, focusing on connotation construction, and collecting government, industry (enterprise), society, and On the basis of the school's school requirements and quality evaluation, graduates are based on the higher vocational education training objectives and talent concept, and guided by the students' educational process, and built the external teaching quality guarantee as the mainstay, with the internal teaching quality guarantee as the main body. The diversified teaching quality assurance system, combined with internal and external integration, continuously builds a sustainable development internal structure and external environment for the talent training model of engineering and learning, and comprehensively guarantees the quality of personnel training.

4.7.4 Beijing Agricultural Vocational College

4.7.4.1 Funding Support

The per capita financial allocation continues to increase, ensuring the steady development of the college. In the 2015-2016 academic year, the total income of the college was 51,065,580 yuan, which was 12.70 million yuan less than that of the previous school year. The reason was that the municipal finance bureau allocated 34.74 million yuan for the construction of the gymnasium in the school year, and 10 million yuan was allocated for the construction of the stadium. However, the level of financial allocation for students has continued to increase. The 2015-2016 school year was 101,400 yuan, an increase of 0.38 million yuan over the previous year. In the income structure, the tuition fee income is 18,227,600 yuan, accounting for 3.57% of the total

income; the financial subsidy income is 455,921,400 yuan, accounting for 89.28% of the total income; the other income is 36,600,800 yuan, accounting for 7.15% of the total income.

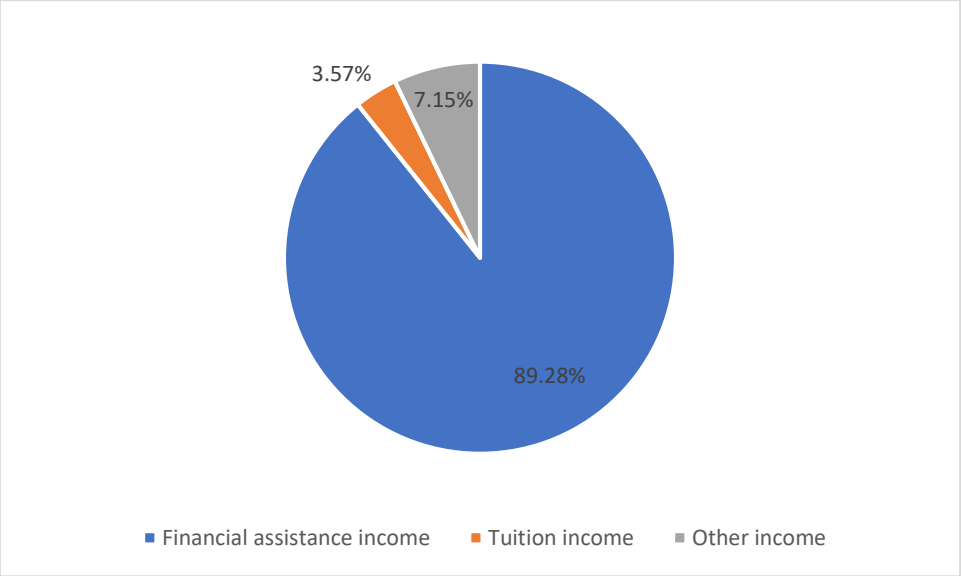

Figure 4.19 Government Funding Support

Source: The author draws the data based on the data.

4.7.4.2 Policy Guidance

The policy guidance is powerful and highlights the characteristics of agricultural vocational education. According to the State and various ministries and commissions, the "Decision of the State Council on Accelerating the Development of Modern Vocational Education", the "Notice of the Ministry of Education on Learning and Implementing the Important Instructions of General Secretary Xi Jinping and the National Vocational Education Work Conference", and the "Modern Vocational Education System Construction Plan" (2014-2020), Several Opinions of the State Forestry Administration of the Ministry of Agriculture on Promoting the Comprehensive Reform of Higher Agricultural and Forestry Education, and in-depth study and understanding, combined with the orientation and characteristics of the college, laid the direction for future schooling and sustainable development, and determined to continue to play Serving the three rural areas, and leading the role of Beijing-Tianjin-Hebei, it provides strong support and confidence in the school.

4.8 Functions of Enterprises in Four Vocational Education Management in Beijing

4.8.1 Beijing Electronic Technology Vocational College

4.8.1.1 Modern Apprenticeship Pilot

In the modern apprenticeship teaching reform, enterprises participate in the establishment of talent training programs in vocational colleges, curriculum and textbook development, teaching implementation design, organization evaluation, and teaching research. The company mainly assumes the form of masters with apprentices, based on the training program. Conduct job skills training, establish a school-enterprise collaborative education mechanism, and achieve dual-sports sports people.

4.8.1.2 School-Enterprise Cooperation

To establish a scientific and standardized management, establish a long-term mechanism for the integration of production and education and school-enterprise cooperation. The company provides order training for vocational college students, as well as internship opportunities, providing vocational training students with a place for production training. According to the characteristics of their own enterprises, strengthen cooperation with vocational colleges, enrich the connotation of school-enterprise cooperation and continuously innovate cooperation forms. Through the establishment of a communication and sharing platform between school and enterprise cooperation, it will jointly develop technology and research and product development with vocational colleges and provide a training platform. Provide technical training opportunities for vocational college teachers and increase the proportion of double-teachers in vocational colleges.

4.8.2 Beijing Finance and Trade Vocational College

Beijing Business and Trade Education Group supported the first phase of the Beijing-Tianjin-Hebei Innovation and Entrepreneurship Instructor Training Camp. More than 60 teachers and students from nearly 30 middle and higher vocational colleges participated in the training camp. Hosted the 2016 Beijing Business Vocational Education Group’s integration of production and education, the leadership of the Municipal Education Commission, industry, enterprise experts, relevant members of

the Beijing Business and Education Group, more than 350 representatives from 117 institutions in Beijing, Tianjin, Hebei, Jiangxi, Inner Mongolia, etc. Experts attended the meeting to discuss how innovative entrepreneurship education leads the integration of production and education and the spirit of artisans. It provides theoretical guidance and practical experience for vocational colleges to implement the principle of "mass entrepreneurship, innovation" and promote innovation and entrepreneurship education reform. In addition, in 2016, the Vocational Education Group continued to carry out the "Double Hundred Program", supporting 9 enterprise experts to teach on campus, involving 9 courses, a total of 440 class hours, and benefiting 500 students, which promoted the improvement of students' social practice ability.

4.8.3 Beijing Industrial Vocational and Technical College

Enterprises continue to strengthen cooperation with vocational colleges, innovate new modes and new content of school-enterprise cooperation, innovate school-enterprise cooperation to cultivate high-end technical skills talent model, and create school + technology park, professional + large enterprise, professional + The school-enterprise cooperation mode of leading enterprises + enterprise alliances realizes talent education, equipment sharing, technology sharing, cultural integration, management and intercommunication, actively explores the new mechanism for cooperation between vocational colleges and industry enterprises to cultivate talents, and serves the capital industry. Upgrades and efficiency and the need for skilled talents in modern urban development.

4.8.4 Beijing Agricultural Vocational College

Promoting the joint apprenticeship of schools and enterprises, jointly training modern apprenticeship pilots, improving support policies, promoting school-enterprise integration and educating people, and encouraging all majors and cooperative enterprises to jointly explore the practice of work-study integration, rational integration, job apprenticeship Cultivate the model, establish a vehicle testing and maintenance technology as a pilot, and cooperate with Beijing Hailian Litong Economic and Trade Co., Ltd. and Beijing Zhengde Yongcheng Automobile Trading Co., Ltd. to explore the modern apprenticeship training mode.

4.9 New Mode of Modern Vocational Education Management

This paper studies the educational management mode of four vocational colleges in Beijing, and mainly examines the management mode of modern vocational education from the following aspects: first, the construction of the teaching staff of vocational colleges; second, the administrative management mode of vocational colleges; The third is the source and management of school-run funds for vocational colleges; the fourth is the role of government and enterprises in the education management of modern vocational colleges; the fifth is the integration of industry and education between vocational colleges and enterprises, the combination of engineering and learning, and the mechanism of production, education and research. And the school-enterprise cooperation management model. According to the content of the modern vocational education management model above, as well as the functions of government and enterprises in the management of vocational education and the problems faced in the management of vocational education. Combined with the relevant research theories and management modes of vocational education management, this paper attempts to construct a comprehensive and comprehensive new mode of modern vocational education management. The new mode of modern vocational education management is mainly based on the three-helix vocational education management, examining the interaction of the school-enterprise-government three-helix structure, from the curriculum of vocational colleges, the source of funding for school, administrative management, the construction of teaching staff, and the quality of students' teaching. Evaluation, government policy guidance, financial support, policy coordination, and the participation of enterprises in vocational education, modern apprenticeship, combination of engineering and learning, industry-university-research mechanism and school-enterprise cooperation, explore the new mode of modern vocational education management led by the school, government guidance The new mode of modern vocational education management and the new mode of modern professional management promoted by enterprises. The roles of each subject are different, but no matter which mode, vocational colleges are the main body and internal motivation of modern vocational education management model innovation.

4.9.1 Modern Vocational Education Management Innovation Model Under the Leadership of the School

Vocational colleges are the main body of the three-helix management model under the interaction of schools, governments and enterprises. Vocational colleges are the first person in charge of professional talent training, including the teaching and training of vocational students, curriculum, administration, and teachers. Equipped. Under the guidance of government policies, we will face the market and cultivate professional talents according to the needs of employment. Vocational colleges should give full play to the advantages of technology and talents, and provide high-quality, high-skilled labor-oriented talents at all levels for enterprise development. First of all, in terms of curriculum, in addition to the necessary professional knowledge courses, we must also pay attention to the training of technical ability, increase the training courses, improve the students' practical ability, and pay attention to the cultivation of students' practical ability. It is necessary to pay attention to the application of theoretical knowledge in practical teaching, and to guide the study of theoretical knowledge through practice. In the structure of the teaching curriculum, we must pay attention to the implementation of the quality education curriculum, and promote the development of teaching reform. Secondly, in the allocation of teachers, we must pay attention to the qualifications of vocational teachers and recruit teachers with high-level qualifications. In addition, in addition to requiring teachers to have professional knowledge, it is necessary for teachers to strengthen their technical capabilities and build a double-skilled faculty.

The management model of modern vocational education led by vocational colleges should strengthen the relationship with the government and enterprises. Pay close attention to the relevant policies formulated by the government departments on the development of vocational education, make full use of the government's policy guidance and financial support, and build vocational colleges with their own characteristics. It is necessary to strengthen the ties with enterprises, lead the docking with related enterprises, carry out industry-university cooperation and school-enterprise cooperation, give play to the advantages of vocational colleges in terms of personnel training, and directionalally cultivate corresponding professional talents according to the job requirements of enterprises. Exploring the vocational school training mode of

“school in the factory”, “school in the factory” generally refers to the cooperation provided by the vocational colleges, and the cooperation with the colleges with high professional relevance, and some resources of the production equipment, technicians and other resources of the enterprise. Introduce schools to build a training base to carry out product development, production and research while conducting on-campus teaching and training. The establishment of secondary colleges by “political schools and enterprises” generally refers to the establishment of secondary colleges in the higher vocational colleges and local governments with distinctive industrial characteristics in the administrative jurisdiction. The specialties offered by the secondary colleges directly correspond to the local industries and directly serve local characteristics. The need for industrial development. In terms of form, this model is mainly a mode of cooperation between vocational colleges, local governments and enterprises. The local government mainly provides teaching land, teaching equipment, etc.; vocational colleges are mainly responsible for the allocation of teaching staff, professional settings, talent development plan formulation, curriculum setting, student management, enrollment plan and campus planning. The development of vocational colleges must actively integrate into the local social and economic development, promote the deep coupling between schools and localities, and establish a new model of vocational education school-enterprise cooperation personnel training in the political school-enterprise in line with the development of local industries. The fundamental starting point for the “government school and enterprise” to build a secondary college is to specifically cultivate local talents who meet the technical skills needed by local industries. Under the leadership of the local government, the educational resources of vocational colleges will be introduced to local governments to assist local governments and enterprises to jointly develop and apply new materials, new technologies, new equipment and new standards, and establish internship training with enterprises. The base introduced the real project of the enterprise into the classroom and innovated the vocational education school-enterprise cooperation and education mode of “cooperative education, cooperative education, cooperative employment, and cooperative development”.

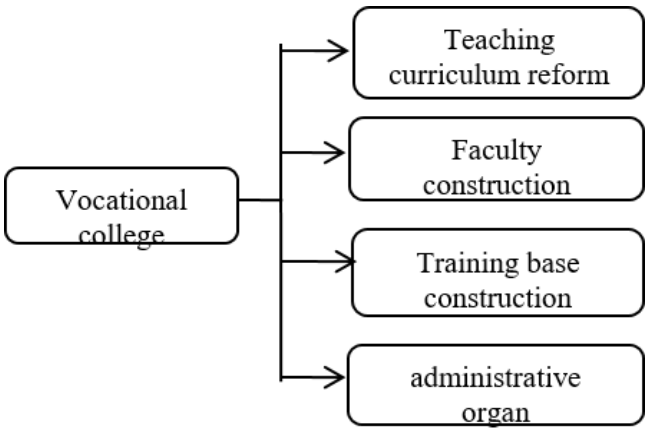

Figure 4.20 Vocational Colleges Leading the Modern Vocational Education Management Model

Source: Authors draw the proceeds.

4.9.2 Modern Vocational Education Management Innovation Model Guided by the Government

The modern vocational education management innovation model under the guidance of the government refers to the government agencies to formulate policies on modern vocational education, guide vocational colleges to carry out vocational education management, and support the updating of teaching equipment in vocational colleges through capital investment, and support vocational colleges. Innovative teaching. Through policy guidance, the objectives, implementation steps and measures of education management in vocational colleges are clarified. The government's main role in the education management of vocational colleges is reflected in the following aspects: First, the government departments are the main providers of relevant resources of vocational colleges, and at the same time provide a good policy environment for the development of vocational colleges, and support vocational education through policies. Development, Decision of the State Council on Vigorously Developing Vocational Education states: The people's governments at all levels should strengthen the overall planning of vocational education development planning, resource allocation, conditional guarantees, and policy measures to provide strong public services and good education for vocational education. Development environment. Second, the government has an innovative platform. According to the needs of production

development, vocational colleges aim to cultivate high-skilled talents and open relevant courses and majors according to market demand. Therefore, vocational colleges must master a large number of market demand information in order to realize the innovation of modern professional management mode. In terms of information acquisition and processing analysis, vocational colleges have irreplaceable authority and all-star. Therefore, the government departments should comprehensively analyze the information of enterprises, society on high-tech talents, industry-university integration projects, industry-university-research cooperation, and development of enterprises and industries, and timely feedback the information obtained to the vocational departments. The reform and innovation of vocational colleges in teaching mode. Relevant governments should guide the establishment of scientific and technological research and development centers jointly established by schools, enterprises, and governments in accordance with the actual needs of local economic development, and strive to achieve the transformation of scientific research results and promote the upgrading and adjustment of local industries.

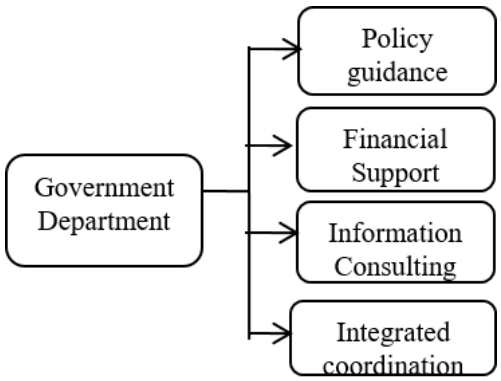

Figure 4.21 Government Guides Modern Vocational Education Management Model
Source: Authors draw the proceeds.

4.9.3 Modern Vocational Education Management Innovation Model Promoted by Enterprises

Enterprises are an important part of the three-helix modern vocational education management innovation model of schools, governments and enterprises. The current

school-enterprise cooperation, industry-university integration, and work-study combination are important components of the modern vocational education management model. They are the basic school management model for vocational education and the inherent requirement for cultivating high-quality workers and technical skills. The role of enterprises in promoting the innovation of modern vocational education management mode includes, firstly, promoting the school-enterprise cooperation management mode through vocational education group-based education. In the early 1990s, with the rapid development of vocational education, the relevant vocational colleges and cooperative enterprises as the main body, the administrative region or industry sector as the form, and the mutual promotion and benefit-win as the basic co-construction principle Education groups have also begun to emerge in China. As a form of educational organization, the Vocational Education Group participates in the participation of vocational colleges and cooperative enterprises, as well as multi-agents related to vocational education such as government agencies, scientific research institutions, and social organizations. Relying on the vocational education group to jointly run schools is a major measure to promote the reform and development of vocational education in China. It is because relying on vocational education groups to jointly run schools is conducive to the integration of multiple forces; relying on vocational education groups to jointly run schools is conducive to the establishment of a government-led, industry-led, enterprise-participating vocational education mechanism; relying on vocational education groups to jointly run schools is conducive to deepening Vocational education school-enterprise cooperation. Second, promote school-enterprise cooperation based on modern apprenticeship. The modern apprenticeship system is based on the traditional apprenticeship system. It is a modern talent training mode based on the deep cooperation between the school and the enterprise, the joint teaching of teachers and teachers, and the cultivation of students' skills. It is a talent training model that integrates enrollment and recruitment. Students do not leave their jobs, the school sends full-time teachers to teach theoretical knowledge and basic skills, the company sends masters to teach professional skills to implement formal education, so as to gain knowledge, skills and education. It combines the advantages of both academic and in-service vocational training. In theory, it is an ideal form of education in the training of

vocational education talents. It promotes the interactive development of the vocational education system and the labor employment system, and can effectively solve some of the problems existing in the current school-enterprise cooperation in vocational education in China. Innovate the mode of educating people in vocational education, give full play to the leading role of enterprises, and participate in the training of vocational education talents. First, enterprises and schools jointly enrolled students for enrollment, optimized the enrollment plan for modern apprenticeships between schools and enterprises, and signed two agreements. Second, enterprises and schools jointly cultivated and optimized the modern apprenticeship training program for both schools and enterprises. Two sets of plans are formulated; the third is that the enterprises and schools jointly conduct teaching, optimize the teaching process of modern apprenticeship talents of both schools and enterprises, and formulate two sets of standards. The school-enterprise cooperation was implemented separately and synergistically, and the vocational education talent training model was innovated. Third, through the political school and enterprise to build a secondary college to promote vocational education school-enterprise cooperation. The establishment of secondary colleges by “political schools and enterprises” generally refers to the establishment of secondary colleges in the higher vocational colleges and local governments with distinctive industrial characteristics in the administrative jurisdiction. The specialties offered by the secondary colleges directly correspond to the local industries and directly serve local characteristics. The need for industrial development. In terms of form, this model is mainly a mode of cooperation between vocational colleges, local governments and enterprises. The local government mainly provides teaching land, teaching equipment, etc.; vocational colleges are mainly responsible for the allocation of teaching staff, professional settings, talent development plan formulation, curriculum setting, student management, enrollment plan and campus planning. The development of vocational colleges must actively integrate into the local social and economic development, promote the deep coupling between schools and localities, and establish a new model of vocational education school-enterprise cooperation personnel training in the political school-enterprise in line with the development of local industries. The fundamental starting point for the “government school and enterprise” to build a secondary college is to specifically cultivate local

talents who meet the technical skills needed by local industries. Under the leadership of the local government, the educational resources of vocational colleges will be introduced to local governments to assist local governments and enterprises to jointly develop and apply new materials, new technologies, new equipment and new standards, and establish internship training with enterprises. The base introduced the real project of the enterprise into the classroom and innovated the vocational education school-enterprise cooperation and education mode of "cooperative education, cooperative education, cooperative employment, and cooperative development".

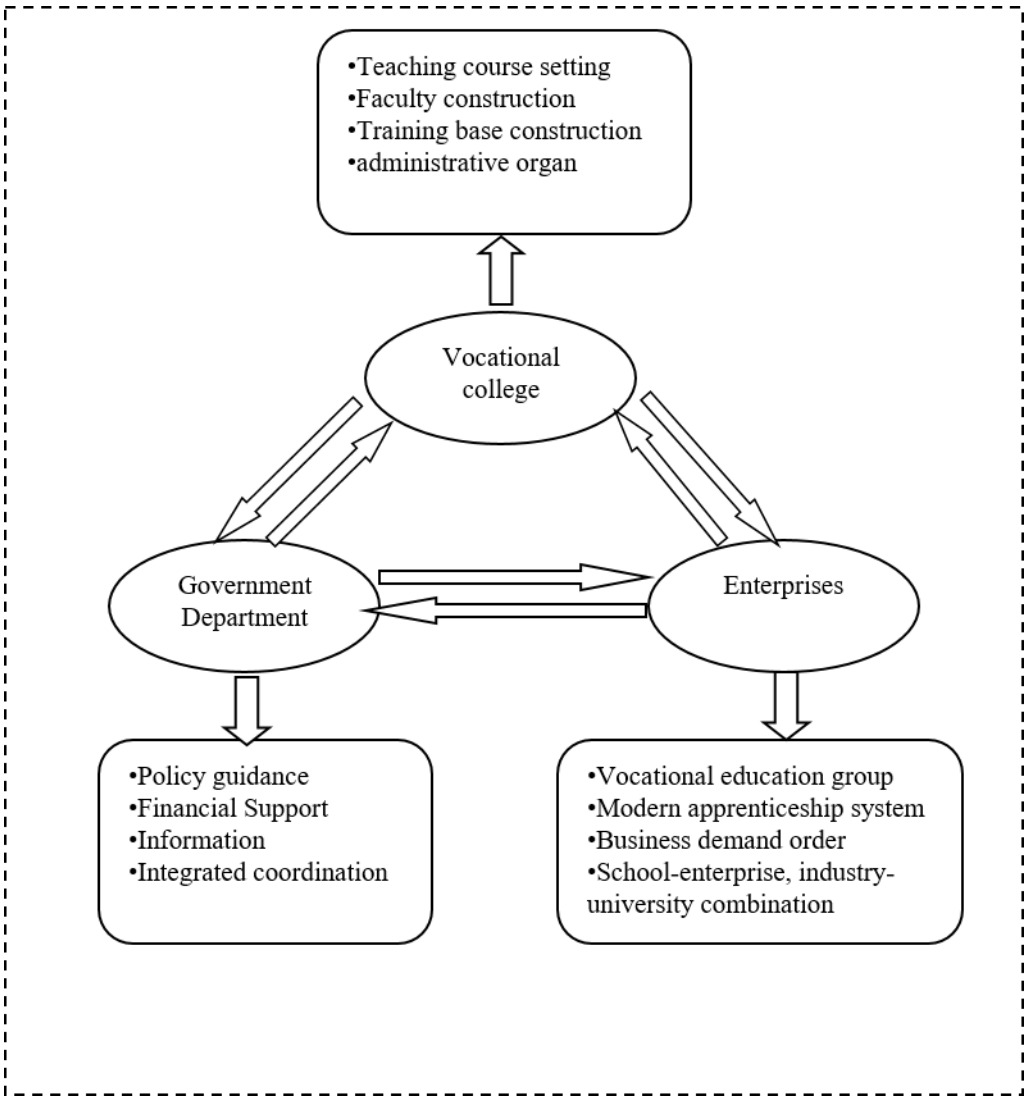

Figure 4.22 Educational Management Innovation Model

Source: Authors draw the proceeds.

CHAPTER 5

CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Development of China's Modern Vocational Education after Reform and Opening Up

5.1.1 The Development of Modern Vocational Education in China after the Reform and Opening Up

Since the implementation of reform and opening up in 1978, vocational education has begun to adapt to the needs of skilled workers in economic development. First, local vocational colleges were established in economically developed areas such as Nanjing. The establishment of vocational colleges has resulted in the reform of higher education in China. A far-reaching impact. From 1991 to 1998, the state formulated relevant policies to explore vocational education management models that are adapted to the characteristics of China's economic development. Through the development policy of "three reforms and one supplement" and "three more reforms", the development of vocational colleges with multi-channel, high-specification and multi-models focuses on teaching reform and exploring the construction of vocational education with Chinese characteristics. From 1999 to 2005, China's modern vocational education entered a period of vigorous development. The Ministry of Education guided vocational colleges to implement hierarchical management, local-based, government-coordinated and social participation management modes, encourage and support social forces to participate in teaching management, strengthen the industry, R&D cooperation of enterprises, scientific research and technical units. From 2006 to 2009, vocational education entered a new stage of development. Vocational education paid more and more attention to the quality of personnel training, promoted the regulations on school-enterprise cooperation methods, and promoted the institutionalization of school-enterprise cooperation. From 2010 to 2018, the government issued relevant policies to guide the school-enterprise cooperation, integration of production and education and

work-study combination and other modes, and constantly promote the quality of vocational education, deepen the policy of integration of production and education, school-enterprise cooperation combination fist.

5.1.2 Characteristics of the Management Model of Vocational Education after Reform and Opening Up

Compared with developed countries, the development of China's vocational education management model has lagged behind. In the era of reform and opening up, in order to adapt to the economic development needs of coastal open areas, especially China's low labor costs, it has attracted foreign advanced manufacturing to invest in China, mainly to complete the processing, assembly and assembly stages of products. This requires a large number of labor-oriented workers with certain skills. In this context, vocational colleges have begun to be established. In the beginning, vocational colleges mainly trained laborers with primary skills. With the development of China's economy, in order to enhance the competitiveness of domestic enterprises in the international market, it is necessary to carry out research and development innovations in technology and technology. This requires more skilled talents to participate in enterprise production and R&D. The government has begun to strongly support the vocational colleges. The development of the school, vocational education entered the fast lane. After entering the 21st century, as the Chinese economy enters a rapid development track, the economic structure continues to escalate, placing higher demands on workers' skills. In order to adapt to economic development and transformation and upgrading, under the guidance of government policies, vocational colleges and enterprises carry out the integration of industry and education and the combination of engineering and learning, and continuously deepen the cooperation between schools and enterprises. Improve the modern apprenticeship system to train students, implement the talent integration project, and improve the overall quality of vocational college graduates.

5.1.3 The Focus of the Management Model of Vocational Education after the Reform and Opening Up

After the reform and opening up, the development of vocational education in China has gradually shifted from the number of vocational colleges and the scale of enrollment to the emphasis on teaching quality and the adaptation requirements of enterprises. In the aspect of teaching management, we attach importance to the construction of teachers and improve the proportion of teachers' dual-skills, so that vocational college teachers have rich professional knowledge and can gain rich teaching practice experience by participating in the front line of enterprises. In addition, we attach importance to the evaluation of the teaching quality of vocational colleges to ensure that graduates are trained and qualified in the school to meet the requirements of the company. In terms of student development, vocational colleges and secondary vocational schools carry out 3+2 convergence teaching. In addition, vocational colleges and undergraduate colleges cooperate in running schools, especially talents-through projects. After graduation from vocational colleges, they enter the undergraduate college. The school continues to further study and guarantees the quality of vocational college graduates. In order to meet the needs of enterprises, vocational colleges strengthen cooperation with enterprises, set up vocational education groups, and provide a platform for industry-university integration, engineering-integration and industry-university-research activities. Improve the modern apprenticeship system, hire enterprise masters to participate in the daily teaching of vocational colleges, teach students work skills, establish training bases and participate in enterprise order production, so that vocational college students are more suitable for the production needs of enterprises.

5.2 Current Status and Mode of Modern Chinese Vocational Education Management

5.2.1 Current Status and Mode of Modern Vocational Education Management in China

Through the analysis of the education management mode of four vocational colleges in Beijing, this paper obtains the current status of China's vocational education

management. First, the vocational colleges themselves focus on the construction of the teaching staff, paying attention to the improvement of teachers' academic qualifications, as well as the dual-teachers. Training, so that vocational college teachers not only have a professional knowledge reserve, but also focus on the skills training of vocational college teachers. In addition, in terms of curriculum, vocational colleges pay attention to matching with the needs of enterprises, strengthen cooperation with enterprises to cultivate students' work skills, actively carry out production, study and research projects, and carry out research and development of technology and technology according to industrial needs and the advantages of vocational colleges. Innovate, give play to the technological innovation ability of talents in vocational colleges, improve the production efficiency of enterprises through technological innovation; second, the government guides the innovation of modern vocational education management model, and guides the development of vocational colleges through the formulation of policies for vocational colleges. Development creates a good policy environment. In addition, the government is the main source of funds for the development of vocational colleges. It has raised financial support for the development of vocational colleges. Vocational colleges need to master the production needs of enterprises when they cooperate with enterprises. Government agencies provide information support for school-enterprise integration and industry integration based on their strong comprehensive information processing capabilities, and coordinate cooperation between vocational colleges and enterprises. Third, enterprises are a key component of the three spirals of schools, governments, and enterprises. Vocational college students provide technical training and internship positions, training The practical ability of students in vocational schools, to better adapt to the needs of business and employment.

In addition, the current modern vocational education management model in China covers the following aspects. In terms of personnel training, the implementation of the talent training model, the cooperation between vocational colleges and undergraduate colleges, and the promotion of the "3+2" medium-high connectivity project, focusing on secondary vocational schools Cooperation. In the school-enterprise cooperation, the model of the modern apprenticeship pilot teaching hall was deeply explored, and the training program was used to carry out job skill training, establish a

school-enterprise collaborative education mechanism, and implement dual-sports sports people. We will deepen the integration of production and education and the school-enterprise cooperation model, and constantly improve curriculum reform, order training, fixed-term internships, production training, and employee training, and innovate school-enterprise cooperation to cultivate talent models. Promote the construction of vocational education groups, form multi-collaboration, innovate school-enterprise cooperation and cultivate high-end technical skills talent model, and create school-enterprise cooperation of "school + science park", "professional + large-scale enterprise", "professional + leading enterprise + enterprise alliance" The model realizes "talent education, equipment sharing, technology sharing, cultural integration, management and interoperability", and actively explores a new mechanism for cooperation between vocational colleges and industry enterprises to cultivate talents.

5.2.2 Problems and Shortcomings in the Current Management Mode of Modern Vocational Education in China

In recent years, vocational colleges have relied on the modern manufacturing vocational education group and the comprehensive reform pilot zone to carry out school-enterprise cooperation in an orderly manner, but the level of cooperation is not deep enough and the form of cooperation is relatively simple. Future vocational schools should closely focus on the needs of the transformation and upgrading of local industrial structure, and at the same time close to the actual situation of the school's own transformation and upgrading, select key enterprises and high-quality enterprises that are important in the economic and social development of the region as the preferred target of school-enterprise cooperation. Continue to expand the scope of school-enterprise cooperation.

The school-running and research-based school-running mechanism has not really formed. The school-running model of higher vocational education institutions has not formed a long-term, stable and close combination of production, study and research. The school-enterprise cooperation stays in the internship and the appearance of part-time teachers. The cultivation of supply and demand mechanisms. Some colleges have short running time, lack of experience, and no guarantee of reciprocal conditions for cooperation with enterprises. It is very difficult for schools to seek

internship training bases, and cooperation with enterprises is relatively poor. While guiding the establishment of modern systems, the government did not formulate specific legal guarantees for the operation of enterprises, lacked guidance for enterprises to participate in the reform of higher vocational education, and failed to effectively encourage enterprises and schools to participate in vocational education.

5.3 Policy Recommendations for the Optimization of Modern Vocational Education Management Model

Vocational education management model optimizes the role of schools. In the optimization of vocational education management mode, the school plays a leading role, which is the main body of the interaction between schools, government and enterprises. Mainly responsible for improving the modern education and teaching management model, including teaching management, curriculum reform, administrative management and the construction of teaching staff. It is necessary to grasp the government's policy guidelines for the development of vocational education and make full use of government policy guidance and financial support. In addition to imparting students' professional knowledge, the construction of training bases focuses on the practical ability of students in vocational colleges. Under the coordination of government departments, we actively participate in the integration of production and education to provide high-quality and highly skilled technical talents for enterprises and society. Vocational colleges should be more actively involved in school-enterprise cooperation projects and carry out multi-level cooperation with enterprises.

Vocational education management optimizes the role of government. In the process of optimizing the management mode of vocational education, the government mainly relies on policy formulation to guide the reform of vocational colleges. As a social manager, the government relies on the powerful information acquisition and comprehensive coordination capabilities of the government departments to promote the connection and interaction between vocational colleges and enterprises through system construction, and provide enterprises with preferential taxation and loans to encourage and attract more. Multi-enterprise and vocational colleges cooperate to encourage the optimization of vocational education management mode promoted by enterprises.

Encourage public entrepreneurship and innovation, guide vocational college graduates to start businesses, and stimulate students' creative potential. In addition, as the manager of vocational colleges, the government provides necessary development funds for vocational colleges. It should also create a good hardware facility and policy environment for the reform of teaching management mode in vocational colleges, and build a policy support platform for colleges and universities. The fund guarantee platform and assume the role of external monitoring in the research and financing institutions of vocational colleges.

Vocational education management optimizes the role of enterprises. In the process of optimizing the modern education management mode, the enterprise assumes the role of the initiator of vocational education skill innovation. Through the cooperation of schools and enterprises, enterprises must accelerate the becoming the main body of production technology innovation. In addition, the practice base of enterprises as vocational college students is not only a collaborator of students in the school, but also a promoter of education model innovation in the development, innovation and reform of modern vocational colleges. Enterprises must give full play to their own advantages and provide vocational college students with a base to apply knowledge to practice. As long as the cooperation between enterprises and vocational colleges is strengthened, it will help the use and transformation of professors' knowledge in vocational colleges, promote the innovation of vocational education management model, and stimulate the creative potential of vocational college students. In the process of school-enterprise cooperation, enterprises can timely feedback the market, industry, and enterprise demand information for talents to the higher vocational colleges, standardize and guide the curriculum reform and teaching management model innovation of vocational colleges.

5.4 Policy Summary and Expected Results

At present, China's economic development has entered a new normal, correctly understanding the new normal, actively adapting to the new normal, and comprehensively serving the new normal. It is the main theme of economic and social development in China at present and in the future, and it also puts forward new

requirements for modern vocational education. The new normal requires schools to pay more attention to the development of connotation, pay more attention to innovation and development, actively promote the structural reform of the supply side of vocational education, actively explore and construct new development models and roads for schools, and provide strong support for economic and social development. According to the demand for talents in the construction of a “high-precision” economic structure, the structural reform of the education supply side was actively carried out, and the “high-end technical skills talent training pilot project” was implemented. As an important part of ordinary higher education, modern vocational education bears the heavy responsibility of cultivating technical talents between research and application, and plays an important role in China’s new industrialization and sustainable development. The development of modern vocational education in the future: on the one hand, explore effective training model of vocational and technical education, optimize the structure of human resources, and improve the quality of human resources; on the other hand, explore the employment-oriented combination of work and study, formulate the strategic goals of the school, and innovate Vocational education management model to enhance competitiveness. The teaching mode adapts to the professionalism of “quality” training: it should establish a pluralistic curriculum concept, the educational objectives are clear and specific, the teaching content is targeted, the curriculum model is designed with practice as the main line, meet the needs of the market, market-oriented, and track Technological changes, extensive market research and demonstration, professional settings must be closely linked to the student source market and the talent market.

The modern vocational education management mode changes from a single college model to an education group model. The development of vocational education needs to be guided by market rules, break through the teaching methods that are separated from the needs of modern social development, focus on teaching innovation, and change the concept of running a school and the mode of running a school. The group is the main school road. First, the group model uses intensive use of resources. The group-oriented teaching mode is coordinated and coordinated by the board set up within the group, integrates the internal resources of the group, unifies the school project, saves the information transmission, organization and operation costs of higher

vocational colleges, saves the cost of information transmission, and changes the previous closed school. The management mode with low investment efficiency provides the basis for the innovation of higher vocational education mode and provides a backing for the development of higher vocational education. Secondly, it is conducive to solving the problem of school-enterprise cooperation and re-establishing the school-enterprise cooperation relationship. Colleges and enterprises use their respective capital investment as the link to achieve mutual benefit and win-win. Due to the pursuit of interests, most companies participate in cooperative education and lack the motivation mechanism for cooperation, which leads to the surface of cooperation between schools and enterprises.

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APPENDICS

APPENDIX A

LIST OF PEOPLE WHO ARE INTERVIEWED IN DEPTH

Government Education Department (4 people)

1) Name: Liu Ninghui, Director of Beijing Education Committee

2) Name: Wang Dongjiang, Director of the Beijing Municipal Education Commission

3) Name: Wang Gang, Deputy Inspector, Beijing Municipal Finance Bureau

4) Name: Chen Xiao, Director of National Machinery Industry Education Development Center

Head of Vocational College (4 people)

1) Name: Li Hui, Deputy Director, Office of Academic Affairs, Beijing Finance and Trade Vocational College

2) Name: Wang Liming, Director, Academic Affairs Office, Beijing Electronic Technology Vocational College

3) Name: Liu Wenlong, Deputy Director of Education, Beijing Institute of Industrial Technology

4) Name: Yang Yongjie Director of Academic Affairs, Beijing Agricultural Vocational College

Corporate Leader (4 people)

1) Name: Zhang Shumei, Deputy Secretary of Dangdang Branch, Beijing Caishikou Department Store Co., Ltd.

2) Name: Chen Fang, Manager of Beijing Datang Yongsheng Technology Development Co., Ltd.

3) Name: Xu Huijie, Deputy General Manager, Beijing Subway Operation Company

4) Name: Zhang Zhihong, Director of Technical Quality Department, Beijing Tianhai Industry Co., Ltd.

Key Points of the Interview:

What is the background, significance and innovation of the Promotion of School-enterprise Cooperation Promotion Measures for Vocational Schools?

The background and significance of the Several Opinions on Deepening the Integration of Production and Education issued by the Office of the State Council?

What are the main measures of the Ministry of Education in developing modern vocational education?

How does a university and a company build a community of culture, knowledge, and technological innovation?

What support role does modern vocational colleges play in serving Beijing's economic transformation and industrial upgrading?

How does vocational education and industry produce co-frequency resonance effects?

What are the cooperation models between vocational colleges and enterprises?

How do companies provide vocational training for vocational colleges and provide internships for students?

How do vocational colleges carry out teaching reform and professional setting?

The role of the government in the integration of production and education, the combination of work and study, and school-enterprise cooperation?

APPENDIX B
IN-DEPTH INTERVIEWS ON THE DEFECTS AND PROBLEMS OF THE FOUR VOCATIONAL EDUCATION MANAGEMENT MODELS IN BEIJING

Introduction to Interview: Studying the management mode of modern vocational education in China, select four representative vocational colleges of Beijing Electronic Technology Vocational College, Beijing Finance and Trade Vocational College, Beijing Industrial Vocational Technical College and Beijing Agricultural Vocational College as samples for analysis. According to the quality training report and other materials issued by 4 vocational colleges in 2017, the educational management mode of vocational colleges was first understood. The vocational education management model mainly covers the following aspects:

First, the construction of the teaching staff of vocational colleges, including the training of double-type teachers, to improve the qualifications of vocational college teachers;

Second, the administrative management mode of vocational colleges, including the organization of institutions;

Third, the training mode of vocational college students, including the pilot of the modern apprenticeship system and the implementation of the talent penetration project;

Fourth, the school-enterprise cooperative education management model includes the integration of production and education, the integration of industrial and commercial enterprises, and the development of vocational education groups. The classic theoretical model of the vocational education management model is the three-helix theoretical model, which covers the three main bodies of schools, government and enterprises. Vocational schools are the main parties to implement vocational education management, and the government plays an important role in the development of vocational education. Roles, including policy guidance, school funding support, and participation in coordinating school-enterprise cooperation. Meeting the needs of

enterprises and ensuring the employment of vocational students is the main goal of vocational education management. Therefore, vocational colleges need to strengthen cooperation with enterprises to promote the integration of production and education and the combination of engineering and learning. In this study, the leaders of the representative vocational colleges (4 persons), the government education department (4 persons), and the person in charge of the enterprise (4 persons) were selected, and a total of 12 people were selected to conduct in-depth interviews on the management mode of modern vocational education and master the management of vocational education. Pattern defects and existing problems.

Head of the First Type of Vocational Colleges: (4 people)

The first interview guest - invited the Director of the Academic Affairs Office of XX Vocational College XXX

Interview time: May 17, 2018, 15:00-16:00

[Q] What are the talent training models implemented in your school?

[answer]

[Q] What is the basis for your school curriculum?

[answer]

[Q] How does your school evaluate the quality of student education?

[answer]

[Q] What is the employment rate of your current graduates?

[answer]

[Q] What is the composition of your school's faculty?

[answer]

[Q] What is the organization of your school administration?

[answer]

[Q] What are the main difficulties faced by your school in teaching management?

[answer]

[Q] What are your school education and teaching management models?

[answer]

[Q] Do the graduates from your school meet the production needs of the company?

[answer]

[Q] What is the main form of cooperation between your school and the company?

[answer]

[Q] What is the breadth and depth of your school's participation in the integration of production and education?

[answer]

[Q] What is the situation in your school's combined management mode?

[answer]

[Q] What is the main source of school funding for your school?

[answer]

[Q] What is the main expenditure direction of your school's funds?

[answer]

[Q] What are the problems in your school-enterprise cooperation?

[answer]

[Q] What is the degree of international school running in your school?

[answer]

[Q] Is your school hiring corporate personnel to participate in teaching?

[answer]

[Q] What is the situation of your students participating in internship training?

[answer]

[Q] How does your school focus on cultivating the overall quality of students?

[answer]

[Q] Does your school fully consider the needs of the company in terms of curriculum?

[answer]

[Q] What role does vocational colleges play in the mechanism of production, education and research?

[answer]

The second interview guest - invited the person in charge of XX vocational college XXX

The fourth interview guest - invited the person in charge of XX vocational college XXX

The Second Type of Government Education Department (4 people)

The first interview guest - an official who invited government departments to work on vocational education XXX

[Q] What role do you think the government plays in the development of modern vocational education?

[answer]

[Q] What do you think the government needs to do to develop vocational education?

[answer]

[Q] What is the government's investment in running funds for vocational education institutions?

[answer]

[Q] How does the government formulate policies to guide the development of vocational education?

[answer]

[Q] What is the government's goal in supporting the development of vocational education?

[answer]

[Q] What do you think is the role of the government in the process of school-enterprise cooperation and integration of production and education?

[answer]

[Q] What are the specific requirements of the government for the development of vocational education?

[answer]

[Q] What do you think the government needs to do in the current development of vocational education?

[answer]

The fourth interview guest - an official who invited government departments to work on vocational education XXX

The Third Type of Business Person in Charge (4 people)

The first interview guest - invited XX company leader XXX

[Q] Do you think that the current graduates of vocational colleges are adapting to the requirements of employment?

[answer]

[Q] Do you think that vocational college students should focus on developing their own abilities?

[answer]

[Q] What role do you think the company plays in the integration of production and education?

[answer]

[Q] Does the company participate in the joint scientific and technological cooperation of the school?

[answer]

[Q] Does the company provide internship positions for students? Is there a practical opportunity for teachers?

[answer]

[Q] Does the company provide part-time teachers for vocational colleges, and whether to establish production workshops in schools?

[answer]

[Q] Does the company provide guidance for the professional setting and curriculum of vocational colleges?

[answer]

The fourth interview guest - invited XX company leader XXX

BIOGRAPHY

NAME	Miss Hongmei Yang
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